

POPULAR GUIDE
TO THE USE OF
THE BATH WATERS.
BY
J. G. DOUGLAS KERR, M. B. C. M.

K26376




22102109650

Med
K26376



POPULAR GUIDE
TO THE USE OF
THE BATH WATERS.



Digitized by the Internet Archive
in 2016

<https://archive.org/details/b28097543>

POPULAR GUIDE

To the Use of

THE BATH WATERS.

*With Hints on Climate, Lodgings, Hotels, &c. ;
Full Instructions for Bathing and Drinking the Waters ;
With Special Chapters on the New Massage Douche Baths ;
Thermal Vapour Treatment ;
And Massage in its relation to Balneology.*

BY

J. G. DOUGLAS KERR, M.B.C.M.,

*Double Medallist and Hospital Prizeman Glasgow University ;
Late House Surgeon Western Infirmary, Glasgow ;
Physician Hospital for Women, Bath ;
Honorary Medical Referee Bournemouth Home for Invalid Ladies,
&c., &c.*



THE BATH HERALD, NORTH GATE.

[1888]

27 778 567

WELLCOME INSTITUTE LIBRARY	
Coll.	welMOmec
Call No.	
	WB

PREFACE TO THE FIRST EDITION.



In the following pages I have endeavoured to put in a short and handy form a guide to the best mode of deriving benefit from the use of the Bath Thermal Waters.

Possessing, as we do, Springs unrivalled in Europe in their healing powers, our city is visited annually by thousands of people of all ranks in life, suffering from many different ailments in very varying degree, all in quest of Nature's greatest blessing—health. To all such sufferers I would point out, thus early, that the Bath waters are no panacea for “all the ills that flesh is heir to,” and that only those suffering from a limited number of diseases (which will be discussed in detail later on) may hope to derive benefit from their use. Nothing can be more disheartening to an invalid than to find, after all the toil and expense of coming here, that the Waters are not likely to benefit his case, or, as we frequently see, are counter indicated. I think it would be well if medical men at a distance, before sending their patients on what may prove a bootless errand, were to consult some brother practitioner in Bath on the subject, or make themselves better acquainted with what our Waters really can do, and what it is impossible to hope from them.

It is with the object of diffusing such knowledge among the profession and the public generally (who may not have time or inclination to read the more elaborate works on the subject), that I have written this short Treatise. Whether it attain this object time will prove.

J. G. D. K.

Bath; July, 1884.

PREFACE TO SECOND EDITION.

The success which attended the first edition of this little work, and its very rapid sale, conclusively prove that it has supplied a want felt by the public. The present edition has been carefully revised to bring it up to date, and two new chapters added ; the first of these was rendered necessary by the building of a new suite of baths for the introduction of modern scientific modes of bathing, chief among which are, the Aix-les-Bains massage douching, and local thermal vapour treatment. The second is devoted to massage, which now takes such an important place in connection with balneology, that any work on the subject must be considered incomplete which fails to take it into account. Thus enlarged it is hoped the "Popular Guide" may continue to meet with public favour.

J. G. D. K.

6, *The Circus, Bath*;
August, 1838.



CONTENTS.

	PAGE
INTRODUCTORY	I
HOTELS AND LODGINGS	14
DISEASES BENEFITED BY THE WATERS	18
COUNTER INDICATIONS TO THE USE OF THE BATHS	24
BATHS AND PUMP ROOMS	27
THE NEW BATHS	33
ADVERTISEMENT OF CHARGES	40
BEST TIME FOR BATHING AND DRINKING THE WATERS	44
THE BATH THERMAL WATERS	47
HINTS ON BATHING	51
DRINKING THE WATERS	57
THE BATH WATERS	60
MASSAGE	71
PHYSIOLOGICAL EFFECTS OF MASSAGE	79
DISEASES IN WHICH MASSAGE IS BENEFICIAL	87
EXTRACTS FROM VISITORS' BOOK	96
DRIVES IN THE NEIGHBOURHOOD OF BATH	104
REPORT TO BATHS COMMITTEE	106

A

POPULAR GUIDE

To the Use of

THE BATH WATERS.

Introductory.

The first discovery of the springs, and the origin of our City, carry us back to pre-historic ages. There is an interesting legend, handed down from generation to generation, which ascribes this discovery to Bladud, eldest son of Lud Hudibras, King of Britain. The story is short and interesting, so I shall narrate it. Bladud being a leper was expelled his father's court. Having assumed a disguise, he travelled to distant parts of the country. After many vicissitudes of fortune he entered our neighbourhood in the lowly station of a swineherd. While tending pigs on Beechen Cliff his attention was drawn to the vapour rising from the valley below. He noticed that in cold weather the pigs were in the habit of entering a small coppice of alder bushes, and that on returning they were covered with black mud. Following them, he

Legend of
Bladud.

discovered the hot springs, and concluded that the animals frequented this spot and wallowed in the mud on account of the heat. After a time he was struck by the fact that such of the herd as had sores or diseased skins were made whole by so doing. Pondering these things, it occurred to him that possibly he might derive similar benefit. He bathed daily, and after a time was entirely cured. On his father's death he succeeded to his throne, and being desirous that his subjects might have the benefit of the healing waters which had worked such a marvellous cure upon himself, he founded the City and constructed the Baths.

Early History.

During the Roman occupation Bath was the first City in this part of the empire. At that time it was clustered close round the springs, and surrounded by strong walls, parts of which are still to be seen. The magnificent architectural remains of Roman Baths, which from time to time have been unearthed, prove how thoroughly our luxurious conquerors appreciated the waters. After their retirement the baths were neglected, and the City fell into decay. It is to the wonderful medicinal properties of the waters, recognised in later times, that we owe the gradual rise of Bath to the magnificent City which we find it in the present day. During the latter part of last century and the beginning of this, Bath occupied a perfectly unique position, being the favourite health resort of England's

rank and fashion, before the craze for continental spas and things foreign took possession of the national mind. Time and experience have proved "that they have gone farther and fared worse," and in recent years Bath and its waters have been rapidly resuming their former place in public estimation.

"The situation of Bath is one singularly beautiful, embosomed as it is within hills, the aspect of which is of a very varied character. One eminence rises abruptly and is finely wooded; the slopes of another are covered with crescents and mansions of great architectural beauty, while a third is only thinly dotted with buildings and the country features still prevail. From each and all of these heights magnificent views can be obtained over a wide stretch of country, and the valleys beneath are intersected by charming walks and drives. The scenery in this neighbourhood is in truth essentially beautiful and picturesque; it woos by its loveliness, yet its charms are so varied and luxuriant that they never weary those who can appreciate and enjoy the beauties of Nature. Besides these rural attractions the City comes prominently into view from many commanding points, and forms a striking feature in the landscape. The houses are all well built, the material for their construction being found in abundance in the quarries adjacent, and it is as durable as it is easily worked."*

Situation.

* The Original Bath Guide.

Sheltered
position.

Few places can lay claim to so many natural advantages as a health resort. Situated as the City is in the beautiful valley of the Avon, it is protected on the North, East and South-east by lofty hills, which shelter it from all the colder winds. Being open to the South and South-west—the quarters from which the wind blows throughout the greater part of the year—with no rising ground of any consequence between it and the sea fifteen miles distant, the City receives a constant supply of fresh air, impregnated with ozone from the Irish Channel and more distant Atlantic. The under current along the river-course from East to West effectually prevents any stagnation of air even in the calmest weather.

Built of
freestone.

The old City was built on the flat, close to the springs, but increasing demand for accommodation has caused it to expand a considerable distance up the surrounding hillsides. The visitor is thus enabled to choose a residence according to his requirements, either in the warm and sheltered valley, or the more bracing situations on the heights. The City is built throughout of freestone, and presents a general appearance of solidity and comfort. As Tunstall says:—"Its lodging houses are not the lath-and-plaster erections of yesterday, run up to last out a building lease, but are substantial residences of freestone. Erected without regard to expense when Bath was the chosen City of gaiety and fashion, they

astonish the stranger with their magnificence and comfort! No meretricious ornamentation is obtruded on our notice, their quiet air of gentility and moderate rental are their best recommendation."* The *Domestic Water Supply* is abundant and of the best quality. Till recently it was turned on for an hour or two daily, a sufficient quantity to last over twenty-four hours being stored in cisterns in each house, but by the new arrangements made by the Cold Water Committee, the supply is now continuous, thus obviating the necessity for storage, and doing away with danger from unclean or contaminated cisterns. The *Sanitary Arrangements* of the City are in the hands of a special Corporation Committee, and are in a thoroughly satisfactory condition. The old cesspool system has been entirely abolished, and pipe drainage substituted. The mains are well trapped and ventilated. The natural gradient is such as to prevent any possibility of blocking, except in the lower part of the city, and there systematic flushings are carried out.

Three or four years ago a *Sanitary Protection Association* was founded on the plan of similar associations in London, Edinburgh and other large towns, and has since been working most successfully. It is in no way official, and has no connection with the public Sanitary Inspector. Any resident, or

* Tunstall on the Bath Waters, page 3.

person about to take a house, by paying one guinea becomes an associate, and can have a thorough inspection made by the experienced sanitary officer of the Association as to the condition of his house, with a carefully drawn plan of the water and drain pipes, and their connection with the mains. Should any alterations or improvements be suggested, it is a matter of option whether they be carried out or not. All work undertaken for associates is done under the supervision of the inspector, who guarantees efficiency. The offices are at 7, Henrietta Street ; the hours of attendance 10 to 4 daily.

The Climate. The climate of Bath is quite peculiar to itself, approaching more nearly that of the Riviera than any other town in England. It has been proved by careful observations, continued for many years, that Bath *enjoys a winter temperature warmer by 5 degrees Fahr. than any other inland town in the country*, while its close proximity to the Western seaboard, with the prevalent Westerly breezes, gives it a lower summer temperature than might otherwise have been expected, *Compared with London, Bath is six degrees warmer in winter, and eight degrees cooler in summer.* The Rev. Leonard Blomefield, in an exhaustive paper on the climate of Bath during ten years, gives the temperature of the seasons as follows :—

Temperature
of the different
seasons.

“ The mean temperature of spring varies from 47°.4 to 50°.5, the range of the mean being 3°.1,

“The mean temperature of summer varies from 60° to $63^{\circ}.5$, the range of the mean being $3^{\circ}.5$.

“The mean temperature of autumn varies from $48^{\circ}.5$ to $52^{\circ}.7$, the range of the mean being $4^{\circ}.2$.

“The mean temperature of winter varies from $38^{\circ}.1$ to $46^{\circ}.3$, the range of the mean being $8^{\circ}.2$.”

Quoting from the same author, we learn the following interesting facts :—

“The mean *monthly* range, or the mean difference The mean
monthly range between the absolute highest and the absolute lowest temperature in each month, is least in February: the months of November, December, January and March showing no very marked difference among themselves in this respect, but the range in all is greater than that in February by three degrees or more. A considerable rise of the range occurs in April and May; in which months, scarcely different in this respect from each other, the mean monthly range attains its maximum. There is very little difference also in the three summer months of June, July and August—in none of which the range is much less than that of April and May. In the two autumnal months of September and October the range is seen to decline further from the maximum; and in November the decline is still more marked, the range in this and in the other winter months being spoken of above.

“The mean *daily* range, or the mean difference The mean
daily range. between the highest and lowest temperature in each

twenty-four hours, rises gradually from a minimum in January to a maximum in July ; then recedes, during the rest of the year, by steps nearly as gradual, till it reaches the minimum again. The chief circumstance noticeable is—that the greatest rise occurs in April ; the daily range of temperature in which month is $3^{\circ}.4$ in excess of that of March. The rise is followed by a less one in May ; the range during that month, and the three following summer months, being nearly the same.

“ It is, however, the mean *daily* range of temperature, and not the mean *monthly* range, that is of most consequence in considering the conditions of a climate. It is quite natural, however, that both these ranges should be greatest in the warm months and lowest in the winter. But then, in these seasons the range is, for the most part, steady, varying very little ; while it is the sudden rise or fall of the range, when the day temperature is suddenly raised much above what it had been a short time before—the night temperature remaining the same, or, perhaps, falling lower—of which persons are ordinarily most sensitive. And this irregularity will be found to occur in the spring. The cause, no doubt, is the prevalence of Easterly winds, accompanied by a very dry state of the air at that season ; rendering the nights very cold, notwithstanding the great power of the sun during the day to heat the lower strata of the atmosphere. Hence it is

that the spring season is so trying, not merely to certain classes of invalids, but sometimes even to healthy people."

After comparing the temperature of Bath with that of other towns, Mr. Blomefield adds :—

"It may be useful now, to sum up in a few words, the chief advantages which Bath enjoys above the other towns we have been comparing it with, in each of the four seasons of the year.

Advantages
over other
places.

"In *spring* Bath has a higher mean temperature, while the night temperatures are not so low, and the mean daily range is less, when compared with Greenwich and Royston especially.

"In *summer* the mean temperature is not different from that of the other towns, but the extreme night and day temperatures are both of them more moderate ; the mean daily range being still more contracted than in spring, in relation to those towns.

"In *autumn* the mean temperature is only very slightly higher than that of other places, the extreme day temperatures scarcely so high as some of them ; but the nights are not so cold, the minimum not falling so low.

"In *winter* the mean temperature is decidedly higher ; the extreme day and night temperatures are also both higher, though the mean daily range shows scarcely any difference."

The mean *yearly rainfall* in Bath is about 30 Rainfall.

inches. The rainfall increases rapidly as you go westward; being 35 to 40 inches at Bristol, and 45 to 50 inches in Cornwall. In some of the higher parts of the surrounding country it reaches as much as 60 to 80 inches. Mr. Blomefield says:—"The *average number of wet days* in Bath, or days on which rain falls to the amount of not less than one-hundredth of an inch, is shown by statistics to be about 161. It must be remembered, however, that a day of 24 hours is here meant, and that most of the rain falls during the night; the fine days, therefore, as ordinarily estimated, would amount to many more than the above calculation gives. It seldom occurs that rain falls throughout the entire day, and the nature of the sub-soil is such that the streets and pavements dry very quickly. The *driest period of the year* at Bath appears, on an average, to be from March to June, both months included. In no one of these months does the rainfall amount to two inches."

Examining the above statistics, it will be seen that Bath presents peculiar climatic advantages as a winter and spring residence for invalids, and more especially for those suffering from chest affections (asthma and bronchitis) who require a mild climate, with slight variations between the night and day temperatures, and a moderate amount of moisture in the air; also for subjects of low nervous vitality, due to heredity,

overwork, or a life spent in tropical regions ; delicate constitutions ; hereditary and chronic rheumatism ; chronic dyspepsia ; and all persons who thrive best where the climate permits of frequent out-door exercise.

The *death-rate* in Bath averages 17·9 per 1,000 per annum from all causes. This may be taken as below the standard average of an ordinarily healthy city. “ The average of *Zymotic mortality* (epidemic diseases), which is the crucial test of the sanitary conditions of any city, places Bath in a still higher position, inasmuch as it only amounts to 1·28 per 1,000 of the population annually for the last quinquennial period, being comparatively lower than probably any other city in England of equal population.”* In estimating the healthfulness of the place we must take into account the large number of invalids and persons of advanced age who come here in quest of health and breathe their last among us.

Death rate.

“ During the year 1882 there were registered 106 deaths of persons over 80, some of which closely approached a century. This is a longevity which well entitles Bath to the appellation of being the ‘ cradle of old age.’ ”† Tunstall on this subject says :— “ There is a special feature in the mortality returns of Bath not seen so markedly in any other city

* Corporation Report.

† London Medical Record

in the kingdom, viz., the very large proportion of the deaths of persons of advanced age. The cause of this and its influence in maintaining the death-rate at so near the figures given above have been ably discussed by Dr. Brabazon, the Medical Officer of Health, in a special report recently published by him to the Sanitary Authority of the city. In it he points out that whereas in Bristol and Clifton there were in 1871 only 3,303 persons above 65 years of age, or about a 55th of the entire population, there were in Bath no fewer than 4,078, or but little over 1-12th. As the birth-rate of the city is low, this large population of aged residents 'must consist,' as he remarks, 'of individuals who are, as it were, introduced and born to Bath at the age of 60.' Such a circumstance has the peculiarity of raising the death-rate at the same time that it testifies to the healthfulness of the city. To quote Dr. Brabazon's words, 'for these aged, Bath has been aptly described as a cradle in which they calmly and quietly rest until nature rocks them to sleep.' " *

Increasing
popularity.

An examination of the "statistics of bathers" conclusively proves that Bath and its waters are rapidly rising in the estimation of the Medical Profession and the public generally. The London profession, after a careful trial of Foreign Spas (which has served only to demonstrate their want of superiority), are now, almost

* Tunstall on the Bath Waters, page 3.

unanimously, recommending invalids, who are likely to be benefited by a course of thermal waters, to Bath. As might be expected, medical men in the provinces have followed suit, and it is to this cause that the very rapid increase of late years may be attributed.

Taking the statistics for the ten years previous to the first appearance of this little work (1873-1883) we find that in 1873 the number of bathers in the different establishments amounted to 45,722. In 1874 there was an increase of over 6,000, the number for that year being 52,016. From 1874 there was a gradual, but steady, rise to 1881, when the total reached 56,297. In 1882 it was 61,303, and during 1883 there was an increase of over 10,000, the total reaching 73,000. Thus in 1883 there were 27,000 more bathers than in 1873, and 17,000 more than in 1881. During the six years which have elapsed since the above was written, the rate of increase has been very uniform, and last year (1888), which proved the most successful the baths have ever known, the number of bathers reached the enormous total of 94,835. It is impossible to form an accurate estimate of how many of these invalids were cured by their thermal course of treatment; but taking the Mineral Water Hospital, where exact statistics are kept, as a guide, we must conclude the number was very large. In the report of the above institution for 1883 we find the following significant facts:—

Number of
bathers.

Proportion
cured.

“It may be interesting to trace the progress of the

institution by comparing its operations at different periods. The records of the hospital show that during the first five years after its foundation, viz., 1743 to 1747, both included, the total number of patients admitted was 636. Fifty years later, during the five years 1793 to 1797, the number was 1,617. Again, after another fifty years, in the five years 1843 to 1847, the number admitted was 2,789; and in the five years, 1876 to 1880, it was 3,974. In the first of these periods the patients cured or benefited were 62 per cent. of those admitted; in the second period 72 per cent.; in the third 79 per cent.; and in the last 91 per cent."

These wonderful results, attributable to some extent to the very careful selection of cases, prove abundantly the efficacy of a thermal course for the cure of disease.

HOTELS AND LODGINGS.

Visitors who wish to cast aside the cares of house-keeping while sojourning in Bath, have an ample choice of good Hotels where everything is provided for their comfort and convenience. The *Grand Hotel*, opposite the Grand Pump Room and Abbey, is connected with the finest suite of mineral baths in Europe. This hotel can accommodate 100 visitors, and provides special advantages for those who are so crippled as to be unable to walk, there being communication by a

lift with each floor. The invalid can be put in a wheelchair in his bedroom, run along to the lift, conveyed to the basement, and thence to the baths adjoining without further movement or trouble. In the case of great invalids this is an immense advantage, and I would advise all such to take up their quarters in the Grand Hotel. The *York House*, in York Buildings, with accommodation for 70 sleepers, contains some handsome suites of rooms. It was the posting establishment when Bath was only reached by coach, and still maintains its connection with the best county families. Its close proximity to the Post Office, Park, Assembly Rooms, and more fashionable parts of the city, renders it a favourite residence with visitors who are better able to get about. The *Lansdown Grove Hotel*, which was formerly a private mansion, is beautifully situated on the southern slope of Lansdown, 400 feet above the sea level, and commands extensive views of the city and surrounding country; being entirely sheltered from the north and east, it is a desirable residence for either summer or winter. The house has been considerably enlarged with smoking and billiard rooms added, and is handsomely furnished throughout with every modern comfort. The boarding terms are very moderate, averaging about £2 12s. 6d. per-week. Surrounding the hotel are about two acres of terraced pleasure grounds, prettily wooded. Also

full-sized tennis courts, summer houses, flower gardens, large conservatories and vineries, which are kept heated, and form a delightful winter garden. The Hotel is within ten minutes walk of the centre of the city, and a bus conveys visitors to and from various parts of the town free of charge. Besides these may be mentioned the Castle Hotel, Northgate Street; the Christopher Hotel, High Street; the White Lion Hotel, High Street; Royal Hotel, Manvers Street; the Railway Hotel, Railway Place; Stead's Private Family Hotel, 2, Pulteney Street; Fernley House, 2, North Parade; and Temperance Hotels in Manvers Street, Stall Street, and St. James's Parade. Some years ago a large Boarding House was started by Mrs. Francis, at 8, 9, 10, and 11, Queen Square. With good management, an excellent table, and moderate charges, it has justly earned a very favourable reputation among a large class of visitors. Under the same management, boarding houses have now been started at 26, Queen Square, and 14, Bennet Street. A very comfortable boarding-house has also been opened at 2, Queen Square, by Mr. Waldron. *Good Lodgings*, at moderate prices, can be procured in most localities. I would specially recommend Pulteney Street and its neighbourhood, North and South Parade, The Paragon, Green Park, Milsom Street, and Queen's Square, for those desiring warm and sheltered quarters;

Boarding
Houses.

Lodgings.

and the Royal Crescent, Circus, Brock Street, Bennett Street, St. James's Square, and the Lansdown Road for those requiring more bracing situations.

An ample supply of Bath chairs (a luxury peculiar to the place) renders conveyance to and from the Baths easy and safe in all weathers. Cabs and pony-carriages are plentiful and cheap, one shilling per mile being the fare throughout the city.

In the coaching days of old a journey to Bath was a thing of some trouble and not unattended with danger, but free railway communication has rendered it easily accessible from all parts of the kingdom. The fast trains on the *Great Western* line bring passengers from Paddington to Bath in little over two hours, and the same railway has made it less than a half-day's journey from all the watering places on the South Coast, and the whole of Wales. The *Midland Railway* makes the journey from the Midland counties, the North, and Scotland a matter of less than a day's travelling, while the increasing ease and comfort of steamboat communication between England and Ireland causes it to be frequented more and more by invalids from the Sister Island.

Railway communication.

Qualities of the Bath Waters.

DISEASED CONDITIONS IN WHICH THE WATERS ARE BENEFICIAL.

I. *Gout* in all its forms is greatly benefited. When the invalid suffers from frequent acute attacks, a course of the waters yearly or twice a year lengthens the periods between the attacks, and if persevered in entirely prevents their recurrence. The duration of an acute attack can be greatly shortened and the pain lessened by the local application of the Berthollet vapour bath, recently introduced from Aix-les-Bains, which constitutes an entirely new departure in the treatment of gout in this country. In *Suppressed Gout* the greatest benefit is experienced; the baths frequently develop it, causing an acute attack, by which the distressing symptoms are at once relieved. They correct the disordered functions of the liver and kidneys, improve the appetite, promote the secretions, and restore the general health. Mr. S. Craddock has recently carried out an elaborate series of urinary analysis, which conclusively prove that, while bathing and drinking the waters there is an increased elimination of uric acid. In *Chronic Rheumatic Arthritis*, when the joints are painful, distorted and stiffened by deposit, no treatment can restore them to

their normal state, but the waters are very beneficial ; in the early stages by promoting the secretions and preventing further mischief, and later on by removing the pain and stiffness and causing an amount of relief which is very gratifying. The waters will greatly lessen the chronic enlargement of the finger joints so common in gouty subjects ; one constantly sees bathers able to wear their rings after a course of the waters though unable to do so for years before.

II. *Rheumatism*.—The varieties of trouble from this disease are so numerous that it is impossible in a short work like the present to enter into detail. Suffice it to say that in all its chronic forms the waters give greater relief than any other form of treatment. It is chiefly from the wonderful cures they have effected in this and the last-named painful malady that the waters have earned their well-deserved reputation. In those cases of rheumatic fever where the joints have been severely affected, where recovery is very slow, and permanent injury is threatening, a course of the baths will very soon work wonders, and thoroughly restore the patient to health. I had recently under treatment a young gentleman who had rheumatic fever two months previously ; the case was a severe one. Salicine and all the usual drug treatment had been thoroughly tried, but beyond a certain point no improvement was made. The knees, ankles, wrists and finger joints still remained enlarged

and so painful that he could neither walk nor dress himself. He was brought to Bath in an invalid carriage, and carried to his first bath. After four baths, one every second day, he was able to walk a mile with the aid of a stick, and suffered no bad results in consequence. After a course of twenty-two baths, with massage, he went home perfectly well.

III. *Joint Diseases*.—Great caution must be exercised in the external use of the waters when there are inflammatory changes in the delicate structures, but for the chronic enlargement and stiffening following rheumatic fever, injury, or long want of use during the treatment of fractures, the waters will be found invaluable. The buoyancy of the water enables many invalids who cannot move without help to do so freely while in the bath, nor must they be disheartened on finding the old difficulty return as soon as they quit the bath ; with a longer course they will soon be able to do as much out of the bath as they can while in it, and should not be satisfied until this end is gained. In most cases perseverance will greatly improve, if not entirely restore, them to their former state of health. The introduction of the Aix-les-Bains system of massage douches, and Metzger's dry massage at the patients' homes, has greatly facilitated the treatment in these cases. The *douche*, both *wet* and *dry* is also very useful.

IV. *Skin Diseases*.—If the legend of Bladud be

true, it was to the cure of these diseases that we owe the first fame of the baths. It is certain that in former ages they were visited mostly by sufferers from skin troubles, and time has not impaired their efficacy. It is chiefly in the scaly skin diseases, such as *Lepra*, *Psoriasis* and *Eczema* that they are useful. In these cases the baths may be given at higher temperatures than is otherwise necessary. In a case recently sent me from Scotland, where there were few patches of skin as large as a crown piece over the whole body free from *Psoriasis*, the patient rapidly improved after a fortnight's bathing, and left after five weeks treatment with scarcely a spot remaining. This case was doubly interesting, as the baths of many continental spas, as well as that of Buxton, had been previously tried in vain.

V. *Nervous Disorders, Neuralgia, Lumbago, Sciatica*, and *Chorea*, are all greatly benefited by a course of the waters. The very large number of sufferers from *Sciatica* and *Lumbago* now sent to Bath for treatment, has brought into prominence the wonderful power of the waters in the cure of these painful diseases. The introduction of the Aix-les-Bains massage douches, and dry massage, has been greatly instrumental in bringing about this result. The length of time necessary to effect a cure is greatest in deep-seated and old-standing affections. When the pain is concentrated in one spot dry

cupping and the douche are found useful adjuncts. In *Palsy* from cold, or from lead, copper, mercurial, or arsenical poisoning, the waters are found to be very useful, especially in the wrist-drop or colic, so common among lead-workers and painters. In *Paralysis* great caution must be exercised, and the state of the heart and arteries carefully examined. As a rule those cases where electricity is beneficial will be found to yield the best results.

VI. *In Debility*, whether due to over-growth in early life, or following acute disease, the waters are a useful tonic. It is a noted fact that the chemical constituents of natural mineral waters are better borne by the stomach than the same substances as usually prescribed. The Bath Waters are a *mild alkaline chalybeate tonic*, and the quantity of *Nitrogen* held in solution increases their alterative action. (The quantity of Nitrogen evolved from the springs amounts to about 250 cubic feet daily).

VII. *Uterine Diseases*.—In the painful and distressing diseases peculiar to women, which render so many of their lives wretched, the Baths have earned a just reputation. In displacements of the womb, tumours, &c., they can do no good beyond improving the general health, but they will be found very beneficial in *Chlorosis*, *Anæmia*, *Leucorrhœa*, and in *interrupted and painful menstruation*. In these cases their usefulness is greatly increased by the use of

lavement and the *douche ascendante*. Writing on this subject, Dr. More Madden, Vice-President of the British Gynæcological Society, says: "Whenever uterine and ovarian dysmenorrhœa, pain, or any other evidence of local active congestion is present, there is no remedy of such universal applicability as the prolonged use of warm or tepid baths. Nature has given us a wide choice of such baths, suitable for almost every form of chronic uterine and ovarian disease, in the natural thermal springs, of which we have at home, perhaps, the most generally useful in these cases, namely, the Waters of Bath."*

VIII. *Insomnia*.—When the sleeplessness is due to brain fag, patients must cut themselves free from all mental work, and spend as much time as possible walking or driving in the beautiful lanes which abound in the neighbourhood. Here the Baths should be taken about two hours before bedtime, followed by half an hour's, or an hour's, massage.

IX. The Baths are a useful adjunct to a *mercurial course*. By promoting the action of the skin and the secretions generally they help the elimination of the drug, and brace the system against its injurious effects. I do not think sufficient stress has been laid on the great benefit to be derived from the waters in these cases. It will be found that when the baths are taken

*British Medical Journal, Page 593. 1885.

during the administration of mercury, the effect of its therapeutical action is increased. In this way the syphilitic poison is more quickly eradicated, and the system restored to the standard of health. In the anæmia and prostration resulting from the long administration of the drug the waters will be found an invaluable tonic. On the continent the practice of combining a thermal and mercurial course is almost universal, and this plan with its permanent good results has not been disputed.

X. *Malaria*.—Patients suffering from malaria are much benefited by a course of the waters. In the early stages their use prevents the recurrence of the attacks, and later on by promoting the action of the skin tends to free the system from the malaria poison. The massage douches are the most useful in these cases.

COUNTER INDICATIONS TO THE USE OF THE BATHS.

(1) It may be stated as a fundamental principle that they should never be used in any disease during its acute stage.

(2) *Inflammatory Conditions*.—So much is this the case that if one finger joint is acutely inflamed more harm than good will be got from their use. The

local vapour bath has a powerful effect in reducing inflammation, and is often used with advantage where the deep baths are counter-indicated.

(3) *Abscesses* acute and chronic.

(4) *Large Open Sores*.—Whether due to operation ulceration, or even a blister, or where the scaly skin diseases have broken the surface.

(5) *Epilepsy*.—On account of the danger of drowning in the bath, and because their use increases the frequency of the attacks.

(6) *Phthisis and Scrofula*.—Their employment here is apt to bring on acute symptoms, and to shorten instead of prolong life.

(7) *Heart Disease*.—Where there is a tendency to apoplexy, fainting, violent flushing of the face, or hæmorrhage. At the same time many patients with well-marked heart affections bathe with impunity. It has been conclusively proved that valvular disease due to acute rheumatism benefits from thermal treatment in a very marked degree. Murmurs become less audible, and the distressing symptoms due to regurgitation and obstruction are lessened in intensity. Fibrous deposits in the joints are seen to disappear as a result of the baths, so it is only natural to ascribe the improvement in the condition of the heart to the absorption of similar deposits.

(8) *Acute Mental or Bodily Prostration*.—Invalids should not bathe after a long journey, or if violently excited.

(9) *Meal-time*.—No bath should be taken immediately before a meal, or for at least two hours after a hearty one.

Patients disregarding the above precautions are apt to cause serious inconvenience, if not danger to themselves, and to bring undeserved discredit on the Bath Waters.

The Baths and Pump Rooms.

The Springs which yield the Thermal Water are three in number, rising from the earth close to each other, in the vicinity of the Abbey Church and Grand Pump Hotel. The thermal establishments are built over the sites of the different springs; they comprise *two Pump Rooms* for drinking the water, and *four Suites of Baths* for private and public bathing. There is also a Fountain opposite the Grand Pump Room where all comers may help themselves, free of charge, to the healing waters as they flow.

The Grand Pump Room, in the Abbey Yard, is a handsome Corinthian building, 88ft. in length, 56ft. in breadth, and 34ft. in height. It is comfortably seated, and provides ample space for invalids to promenade at leisure. The fountain receives a supply of $8\frac{1}{2}$ gallons per minute of thermal water direct from the spring, at a temperature of 114° F. The room, which has been very handsomely re-decorated, is open from 8.30 a.m. to 6 p.m. on week days, and from 8.30 to 9.30 a.m., and again from 1 to 3 p.m. on Sundays. The Pump Room serves as a Retiring Room for the King's and Queen's Public and Private Baths, where the bathers may cool at leisure. In the afternoon it is used as a concert room. The City

Grand Pump
Room.

Band, enlarged and greatly improved under the management of Mr. Van Praag, has earned for itself a widespread reputation. Handsome rooms, provided with newspapers and periodicals, are attached to the other bathing establishments, and it is wise in most cases for the bather to avail himself of their use before going into the outer air.

Bathing
Establish-
ments.

The *Bathing Establishments* are regulated to suit the requirements of all classes of invalids. The Corporation have been indefatigable in their exertions for the public benefit, and the state of perfection reached is such that few of the continental baths can rival and none excel them in luxuriance and comfort.

Royal
Private
Baths.

The *Royal Private Baths* adjoining the Grand Pump Hotel, and connected with it by a lift, are by universal consent acknowledged to be the finest suite of immersion baths in Europe. They were built in 1870 at a cost of £14,000. Down the centre runs a spacious corridor 180ft. long, 8ft. wide, and 16ft. high. It is roofed with glass, and the floor is beautifully laid with encaustic tiles. Entering off this on either side are *six deep baths, three reclining baths, and two dry douches*. Connected with these baths by a flight of stairs is the magnificent tepid swimming bath presently to be described. At the end of the corridor there has recently been built a very handsome addition consisting of ladies' waiting-room, gentleman's waiting-room, and smoking-room.

The *Private Deep Baths* contain from 800 to 900 gallons of water, with a depth of from 4ft. to 4½ft. They are T shaped and lined throughout with porcelain tiles. The baths occupy the greater part of the bath-rooms, which are 12ft. to 14ft. long, 8ft. wide, and 11ft. high, and are large enough to permit the bather to walk about and freely exercise the limbs. The approach in all is by a flight of steps with brass side rods, by which the bather may support himself, and special arrangements are made by means of an arm-chair swung to a crane by which cripples can be lowered into and removed from the bath without trouble or movement. Each bath is provided with a douche, by means of which the water can be applied to any part of the body while the bather is submerged in the bath. This form of douche, called the *wet douche*, is milder in its effects, and is often borne without discomfort, when the *dry douche*, or direct and more violent impingement of the water on the body, causes inconvenience. This addition to the baths has greatly facilitated the treatment in cases of joint diseases and also of lumbago and sciatica. Since the Corporation have supplied attendants to carry out massage in connection with these baths, their usefulness has been greatly enhanced. Each bath has a handsome private dressing-room and closet attached, where every requisite for the invalid's comfort is supplied. Smaller baths of the same type,

Private Deep
Baths.

Douches.

Reclining
Baths.

each with a dressing-room, can be had at lower prices. *Reclining Baths* can be had at the different establishments if preferred. These when filled contain 150 gallons of water, and have all the conveniences of dressing-rooms, &c., the same as the larger baths. *Vapour and Shower Baths, Douche Baths, Enema or lavement* apparatus, and the *Douche ascendante* are also provided. In fact nothing has been left undone which will facilitate the cure of disease or tend to the comfort of the bather.

Different
forms of Baths

Swimming
Baths.

There are many large and comfortable swimming baths. The *New Royal Swimming Bath*, entering off the New Royal Baths, is very handsome, being tiled throughout. It is lit and ventilated by means of a glass roof 50ft. high. The bath is 80ft. long by 27ft. wide, varying in depth from 5ft. to 3ft. 6in., and contains 50,150 gallons of the Bath Thermal Water. The temperature is kept about 88° F., by means of a constant flow of fresh water through the bath, amounting in the day to 200,000 gallons. This keeps it very fresh and pleasant. Once a week the bath is emptied and thoroughly cleaned. On the south side of the bath are 17 dressing-rooms, well ventilated and heated in winter; hot towels and all toilet requirements are provided for the use of bathers. Swimming lessons for both ladies and gentlemen can be had on application. *The King's Bath*, adjoining the Grand Pump Room, which is open to the sky, is 59ft.

long and 40ft. broad, and contains 56,332 gallons of water, with a walled-in depth of $4\frac{1}{2}$ ft. In the centre of this bath is a space surrounding the spring which supplies it. The spring, which is the largest of the three, yields two-and-a-half hogsheads per minute, at a temperature of 117° F. to 120° F. In the bath the temperature ranges from 117° F. close to the spring, down to 99° F. in the parts further from it. On the northern side is a corridor with dressing-rooms having an entrance into the bath, and also containing reclining baths. On the walls are many interesting relics of by-gone ages, when it was the fashion for ladies and gentlemen to bathe together in powdered wigs and most elaborate costumes. The *Cross Bath* at Hetling Court is a cheap public bath. In connection with the Royal Private Bath in Hot Bath Street are two swimming baths, the *Hot Bath* and the *Tepid Bath*. The latter is 62ft. long by 23ft. wide, and contains 40,000 gallons of water, at a temperature of 88° F. On the eastern side are a large public dressing-room and six small private ones handsomely furnished and containing fireplaces. From each a flight of steps leads into the bath.

Special arrangements can be made for providing invalids with the Mineral Water at a temperature not exceeding 100° F. at their own homes, and recently the waters have been aerated, under the name of *Sulis Water*, for the use of patients who have so far

recovered, and who may find it necessary to continue the use of the water for drinking purposes at their own homes, a course which from personal experience I can thoroughly recommend.

Mineral Water
Hospital.

It is impossible to pass from a description of the bathing establishments without mention of that noble charity, the *Mineral Water Hospital*. Opened in 1742, it has afforded incalculable relief to something like 55,000 sick poor. It is a national charity, receiving patients from all parts of the country, the only recommendation necessary being that they are poor and suffering, and are fit cases for the water treatment. As altered and extended in 1861, it affords accommodation for 144 patients—85 males and 59 females. Full particulars as to admission, &c., may be had on application to the Resident Medical Officer.

The New Baths.

For some years Balneology has been making rapid strides on the Continent, and thermal treatment, greatly improved by recent scientific modes of application, has come to be recognised as a trustworthy and efficient treatment in many diseases which yield but indifferent results to the action of drugs. For some time English watering places were slow to benefit by the change, and the cause was not far to seek: they had failed to advance with the age and had retained the obsolete modes of bathing handed down from a former generation. Having practised for some years in Bath, and finding how severely we were handicapped in this way, I brought the matter under the notice of the Baths Committee, and paid a visit to Aix-les-Bains, as the spa of all others on the Continent where thermal treatment was most perfectly carried out. On my return I drew up and presented a report to the Baths Committee, which will be found in the appendix. Major Davis, the City Architect, also visited Aix and several other Continental bathing resorts to acquire the technical knowledge necessary to the improvement of our baths, and on his return drew up a very full report. The Corporation took the matter in hand with exemplary diligence, the

result being that a Government loan of £23,500 was voted for the erection of a new suite of baths, and the work begun forthwith. Thus was inaugurated a movement which must prove a revolution in English thermal treatment, and, when completed, place Bath in the very first rank of thermal spas in Europe. It is no exaggeration to say that these baths surpass in magnificence anything formerly attempted either in this country or on the Continent, while nothing that science or experience can suggest has been neglected to bring them to the highest point of utility. Part of the new building is occupied by reclining and deep baths on the same plan as those already in existence, but the greater portion is devoted to improved modes of administering the waters: chief among these are—

Massage
Douches.

I. *Massage Douche Baths* on the Aix-les-Bains system.—The rooms set apart for this purpose are very grand, comprising in each suite a douche room and two dressing rooms. The douche rooms are 13ft. 9in. by 10ft. 6in., with domed roofs, 20ft. high. The floors are artistically laid in ceramic tessera, the walls and roof being tiled throughout in pretty designs. The dressing-rooms, which have the same height of roof, are decorated in the same style, and present a beautifully clean, cool appearance. Arranged round the Bath rooms are douches, sprays and showers of every variety and form. There is a double water

supply, one consisting of the thermal water at its natural temperature of 117° Fahr., the other of cooled thermal water. The Aix-les-Bains plan of cooling with ordinary town water is discarded at Bath, as the resulting dilution of the thermal water must detract from its efficacy. The water pipes terminate in a mixing ball (which, I believe, is an invention of our City Architect), to which a thermometer and pressure gauge are attached, so that the temperature and pressure of the douches are entirely under the control of the attendants acting on medical orders. When in use the floor of the bath room is covered to the depth of 2 or 3 inches with hot water. The furnishings consist of a simple wooden chair and stool, both of which should be sprayed with hot water before being used. Some douche rooms have two attendants, others only one.

System of
taking them.

The bather having undressed enters the bath room, when the attendants, one in front, and one behind, play powerful douches over the body, at the same time moving the joints to their utmost extent, firmly kneading and shampooing the different parts and conducting a general system of massage, the parts most affected receiving the greatest attention. With the knowledge gained by experience the attendants determine how far this process can be carried without causing pain or doing harm. A tepid shower and douche gradually cooled down until a bracing effect

is obtained, and the patient leaves the douche room to be completely swathed in hot towels, sheets, and blankets, on a sofa in the dressing-room, where he is left to repose till thoroughly cooled, when he proceeds quietly to dress. In the case of very delicate patients it is better that they should be spared the fatigue of dressing after the bath, and for such, arrangements can be made to have a suit of under-flannels, dressing-gown, &c., heated in the hot press, when by means of a Bath or Sedan Chair they can be conveyed home and put to bed for an hour or two to rest.

Electric
Douches.

I have recently been carrying out some experiments which prove that the water of the douches is in sufficient continuity to conduct an electric current, so that when the arrangements are completed a new means will be devised of utilising this powerful therapeutic agent. By attaching one pole of the battery to the nozzle of the douche, and moving the other to different positions, either the whole or any part of the body can be made to complete the circle, and thus be brought under the action of electricity, and that by either the continuous or interrupted currents. I have no doubt that when fully carried out this will add greatly to the utility of the douches, more especially in cases of paralysis, sciatica, lumbago, neuralgic rheumatism, and in restoring muscular tone, the loss of which is a prominent feature in gouty and rheumatic subjects through want of exercise.

II. *Local Thermal Vapour Bath*.—By means of an ingenious contrivance any part of the body, an arm, leg, or even a single joint can be subjected to the influence of the thermal water in the form of natural steam. The part operated on soon begins to perspire freely, and becomes soft and pliable. If it is so ordered douching and massage follow, and thus a very powerful local effect is produced. This bath is very useful in all cases of stiffening, or enlargement of joints due to any cause. As formerly stated it is also a very soothing treatment for acute gout, relieving the sufferer from much pain and shortening the duration of the attack.

Local
Thermal
Vapour
Bath.

III. *Steam Bath*.—For this bath ordinary steam is mixed with the thermal vapour to raise the temperature to the desired point. Dr. Grainger Stewart, of Edinburgh, graphically describes this form of bath—"The patient enters an apartment which contains a curious wooden box with a round hole in its movable lid. After undressing he steps into the box, and finds that he is shut in all except the head, the round hole being occupied by his neck. Immediately a valve on the level of the floor is opened, the hot vapour rises about him, and he soon begins to perspire freely. The perspiration running down his brow, trickles down his face. Presently he feels the stream flowing down his sides and his legs, and very speedily a feeling of oppression and debility

Steam Bath.

comes on, and after ten or twenty minutes the bath is opened up."*

This form of bath is rather debilitating and should never be taken unless a medical man has pronounced the patient strong enough to bear it. It has a powerful effect in stimulating the action of the skin, and is very useful in promoting secretion when there is a lack of perspiration with a harsh dry skin.

Douche en
Cercle.

IV. *Circular Spray, or Douche en Cercle*.—Composed of tiers of pipes, forming two-thirds of a circle, perforated with minute holes, and emitting very fine jets of water. The temperature of the spray being under perfect control, alternating shocks of hot and cold water can be given which have a very stimulating effect on the nervous system. I believe that electricity can be added to this as well as to the larger douches, which will greatly enhance its utility.

Nose, Ears,
Eyes,
and Throat
Douches.

V. A very handsome room is fitted with every form of special douche and spray apparatus, by means of which the thermal water may be applied, either in a continuous stream or in a minute state of pulverisation, to the nose, ears, eyes, or throat. Sir Morell Mackenzie, when recently visiting Bath, spoke in the highest terms of this form of treatment for chronic laryngitis, and certain other forms of throat disease. It is found very useful in those suffering

* Aix-les-Bains, page 21.

from weakness or loss of voice, due to excessive public speaking, preaching, singing, or inveterate smoking.

Without in any way interfering with the efficacy of the Bath waters or lowering their *prestige*, arrangements might be made, as is done at many foreign spas, to supply pine baths, peat or so-called mud baths, pumiline baths, &c., for cases requiring this special form of treatment.

The Hot Mineral Springs of Bath.

ADVERTISEMENT OF CHARGES.

The Water for Bathing and Drinking is supplied direct from the Mineral Spring, the natural temperature of which is from 117° to 120° , and when used for bathing it is reduced to the required heat by the addition of cooled mineral water. Tickets must in all cases be procured at the Ticket Office, adjoining the Grand Pump Room Hotel, previous to bathing, and bathers are requested to see that their tickets are clipped by the attendant to whom they are delivered.

It is to be hoped that a reduction may be made in the prices of the baths, or that a greater number of baths at moderate prices may be constructed for the use of the public at large, reserving the present high-priced baths for those who desire to pay for the extra luxury they supply.

CHARGES FOR BATHS.

The Baths are open to the Public daily from 7 a.m. to 9 p.m., and on Sundays till 10 a.m.

NEW ROYAL BATHS (ADJOINING THE GRAND HOTEL).

					<i>s.</i>	<i>d.</i>
First Class Deep Bath	...	...	...	...	2	6
Ditto ditto with Douche or Shower					3	0
First Class Reclining Bath	...	...	...	...	2	0
First Class Reclining Bath with Douche or Shower	...	...	...	...	2	6

	<i>s.</i>	<i>d.</i>
First Class Reclining Bath with Massage,		
1 Doucheur	3	6
Dry Douche	2	0

Attached to these Baths is a Swimming Bath.

Daily supplied with Fresh Mineral Water, Temp. 82 to 84 Fahr.

For Ladies' use on Mondays, Wednesdays, and Fridays.

	<i>s.</i>	<i>d.</i>
With use of Private Room for 1 Person ...	1	0
Ditto ditto 2 Persons ...	1	6
Ditto ditto 3 Persons ...	2	0
Public Room	0	6
Bathing Dresses	0	2

This Bath is available for Gentlemen on Tuesdays (till 1 p.m.).

Thursdays, Saturdays and on Sunday Mornings up to 9.30 a.m.,
at 1/- each person. Attendant's Fee, One Penny.

KING AND QUEEN'S BATHS (STALL STREET, OPPOSITE THE HOTEL).

	<i>s.</i>	<i>d.</i>
FIRST FLOOR.		
First Class Deep Bath	2	6
Ditto ditto with Douche or Shower	3	0
First Class Reclining Bath	2	0
Ditto ditto with Douche or Shower	2	6
Ditto ditto with Lumbar Douche ...	2	6
Ditto ditto with Ascending Douche	2	6
Ditto ditto with Special Douche ...	3	0
Ditto ditto with Massage, 1 Doucheur	3	0
Needle Douche, or Douche en cercle	2	0
Ditto with Deep Bath	3	6
Vertebral Douche 1/- extra	1	0
Moist and Dry Heat per Hour	2	6
Ditto ditto with Deep Bath... ..	3	6

GROUND FLOOR.

	s.	d.
First Class Reclining Bath	1	6
Ditto ditto with Scottish Douche ...	2	6
Reclining Bath with Massage	1	9
Massage Bath	1	6
Scottish Douche alone	1	0
Second Class Reclining Baths	6d. and 1	0
King's Public Bath (Closed on Wednesdays)	6d. and 1	0

FIRST FLOOR.

Massage and Vapour Baths, Bouillon, and Pulverising Room.

Massage Douche (Aix-les-Bains system) with		
2 Doucheurs	3	6
Ditto ditto 1 Doucheur	2	9
Berthollet, Natural Vapour Bath	2	6
Ditto with Massage, 1 Doucheur ...	3	0
Massage in Reclining Bath and Douche,		
1 Doucheur	2	6
Bouillon Room, if taken alone	1	0
Pulverisation for Nose, Eyes, Ears, Face, or		
Throat	1	0
Sitz Bath (Special)... ..	2	0
Special Medicated Baths... ..	3	6

ROYAL BATHS (BATH STREET).

First Class Deep Bath	2	0
Ditto ditto with Douche	2	6
Second Class Deep Bath	1	6
Ditto ditto with Douche	2	0
Reclining Bath	1	6
Ditto with Douche	2	0
Shower Bath	1	6

Two Children under 12 using the same Bath pay as an adult.

A Child Bathing with its Parent pays 1/-

TEPID SWIMMING BATH (FOR GENTLEMEN ONLY).

With use of Private Room 9d. No fee.

Ditto Public Room 6d. No fee.

This Bath is closed on Thursdays at 1 p.m.

ARRANGEMENTS FOR DRINKING THE WATERS.

The Grand Pump Room is open each day from 8.30 till 5 in Winter and 6 in Summer, and on Sundays after Morning Service. Charge, single glass, 2d.

Per Week £0 1 6

Per Month 0 5 0

Per Three Months 0 10 0

Per Six Months... .. 0 15 0

Per Twelve Months 1 0 0

For a Family 2 0 0

At the Hetling Pump Room the charge is 1s. per week, and 2d. per glass.

Portable Baths, at a temperature not exceeding 106° can be supplied at private residences, by special arrangements.

No money is allowed to be taken by the attendants except the above specified fees.

The Corporation have much pleasure in placing the baths at the disposal of medical men who visit the city for a course of the waters. On presenting their cards to the superintendent, they have the use of all the baths free of charge.

BEST TIMES FOR BATHING AND DRINKING THE
WATERS.

The season at Bath differs from that of most other Thermal Springs, the best period being in the winter half of the year. Long experience has demonstrated the advantage of this, and now, by universal consent, invalids are recommended to come not earlier than September, nor to stay later than the end of May. While the whole year is open to invalids, the best months are March, April, May, September and October. By referring to the notes on climate, it will be seen that Bath enjoys so mild a winter climate that the risks of bathing in these months are less than in more exposed or colder places. From this peculiarity patients who have been taking a summer course at Buxton, Harrogate, Strathpeffer, or one of the foreign spas may, with advantage, continue their treatment at Bath when it would be dangerous to do so elsewhere. It must not be supposed, however, that it is injudicious to use the Bath Waters in summer. In the case of great invalids the warmer months are often the most suitable. Summer quarters should be chosen at, or above, the level of the Circus, and not low down in the valley.

The Time of Day when Baths should be taken varies so much according to the condition of the patient, state of weather, &c., that no hard-and-fast

rule can be laid down, and it must be left to the decision of the medical adviser. Robust people may bathe with impunity at any time of the day, before breakfast being the best time; but for invalids it is better, if the weather be very cold, to take the bath in the afternoon and remain indoors for the rest of the day.

For Drinking I advise patients, when it is possible, to take one tumbler of water before breakfast, and a second either before lunch or early in the afternoon.

No special preparation is necessary before the invalid starts his Thermal course, beyond what is required for all tonic and alterative treatment. *The one essential is that the bowels be regular, and the digestive organs in a healthy condition.* Much valuable time is often lost by the neglect of this simple rule. Visitors would do well, when the state of health permits, to subject themselves to a mild saline purge every second morning for a week before coming. During the course all undue exposure to cold must be avoided, and as a precaution it is well to wear flannel underclothing. All excesses of the table must be strictly guarded against. The simpler and plainer the diet, consistent with health, the better. Meat three or four times a week in most cases will be found sufficient. Eggs, white fish, poultry, game, and farinaceous food of all sorts will supply sufficient variety. *The use of Alcholic Stimulants* must be

Preparation
before
Bathing.

Diet.

Stimulants.

regulated by the requirements of the case, long habit, &c., but, as a general rule, they are better left alone, or used only in the greatest moderation. Sufferers from gout and rheumatism have to exercise much self-denial regarding the luxuries of the table, but each individual case must be considered on its merits, and left to the guidance of the medical man in charge. All heavy wines and malt liquors should be strictly avoided. When the weather permits, as much time as possible should be spent in the open air. The surrounding country presents numerous attractions for both carriage and walking excursions.

The Bath Thermal Waters.

The Bath Waters are so powerful in their action that a course of treatment by them must be entered upon with caution, and not without a certain amount of responsibility. Many people think that Thermal Waters are blessings specially provided by nature for their use, and that they have nothing to do but to bathe and be cured of their diseases. The same argument applies to all medicines: they are all blessings provided by nature for the cure of suffering humanity, but it is only by the accumulated experience of their effects, handed down from generation to generation, verified and corrected by the more accurate modes of investigation introduced in later years, that the Medical Profession has been enabled to estimate their full value, give the proper dose for each individual case, and so confer the greatest amount of benefit from their employment. Mineral waters are complex medicines, greatly benefiting some, not suiting, or possibly injuring others, and varying in their degree of efficiency for the same individual at different times and altered states of the constitution. Invalids who enter on an experimental course of their effects in their own persons may find, to their cost, that they have been playing with edged tools. Dr.

Caution to
Bathers.

Robertson, writing on the Buxton Waters, gives the following caution, which applies with equal truth to the Bath Waters :—

“The character of these mineral waters, their peculiar and great effect on the system when used either externally or internally, the modification of their effects according to the quantity that is drunk, the temperature at which the baths are used, the frequency with which the baths are used, and the period of the immersion, should be carefully studied, in order to the judicious and prudent use of so valuable a medicinal agent. It is only by such discriminating attention that these waters can be made to act beneficially upon different ailments in different stages of these ailments, and in the infinitely modified states of the system induced by the hereditary or acquired circumstances and conditions of life. The use of these waters disadvantageously is a direct reflected injury to the medical man who may have suggested their employment, and to the reputation of the waters, as well as a manifest (however unintentional) wrong to the patient. The essentially stimulating, and the no less essentially alterative character of the waters, must be known and ever borne in mind, if they are to be prescribed otherwise than empirically, and the necessity of using them with discretion and care must be enforced accordingly, if they are to be made as useful as possible. This

presupposes, of course, that the case under consideration is suited to the use of the waters in some way or other."

It has often been contended that the benefit derived from the waters is entirely due to their high temperature. This is not correct. Ordinary hot baths are relaxing and debilitating, while the mineral baths are tonic and bracing in their action. After their use the bather experiences a healthy glow. The spirits are raised, the appetite sharpened, the secretions augmented, and a general sensation of increased vitality, which lasts for a considerable period, pervades the whole system. In some a pleasurable drowsiness is produced, and when it passes off, or after a short sleep, they awake braced and invigorated. This is what takes place when the baths are proving most beneficial. In cases where they are not it is just the reverse. While in the bath, should there be a feeling of faintness or oppression, flushing of the face, and fulness of the head, and on leaving it a hot dry skin, parched mouth and general feverishness, with languor and restlessness, the tongue becoming foul and coated, the bowels confined, the urine scanty and high coloured, with a feeling of upset and uneasiness, the invalid should at once seek medical advice. Where this is more or less the case, something is wrong. It may be that the baths are being taken too frequently, at too high a temperature, or in some way not suited

Effects of the
Bath.

Where they
disagree.

to the individual. They should at once be discontinued and the errors corrected before they are again resorted to.

It is a popular idea that there is great danger in taking cold after a hot bath. This has arisen from the fact that we are apt to do so when heated by exertion, but the two cases are not analogous. In the latter there has been rapid tissue waste, and a loss of latent heat, due to the evaporation of moisture on the surface and the increased blood supply to the skin where it comes in contact with the cold atmospheric air. In fact, the vital forces are at a low ebb, and the system less able to resist a chill. While in a hot bath, on the other hand, the body is surrounded by a medium at a greater temperature than its own, and of a specific gravity nearly equal to the blood, hence heat is absorbed, and the vital force husbanded. In Mineral Water Baths there is also a stimulant effect on the skin, due to the dissolved chemical constituents, which tends further to brace the system. With ordinary precautions in cooling, there should be no danger whatever. Taking cold is nothing more nor less than a sudden lessening of the vital force, which acts in a deleterious way on the system, and produces certain well-marked results. As a matter of fact, a hot bath, taken in time, will often be found to cut short a cold by restoring lost vitality and causing the skin to act.

Hints on Bathing.

Having procured a ticket* at the office beside the Grand Pump Hotel, and selected a bath, the invalid should proceed quietly to undress. The attendant having meanwhile filled the bath at the desired temperature, will render any necessary assistance. In the case of nervous subjects, or great invalids who are unable to help themselves, it is well to have a servant in attendance, to remain in the dressing-room if not in the bath-room.

The bath should be entered slowly, one step at a time, the water being laved over the upper part of the body before it is immersed. In this way the shock which would otherwise occur, is obviated. When the bottom of the bath is reached, the bather should at once sit down on the *sedilia* provided for the purpose. When bathing at high temperatures the head should not be put under water, as it is apt to cause unpleasant sensations, and is not free from danger. The great buoyancy of the water renders it difficult for a light bather to retain the sitting position at first, the tendency being for the body to rise to the surface. By taking hold of the side rings provided for the purpose, after a little practice this difficulty is easily

*At the busy season it is always well to engage a bath at least one day beforehand, otherwise it may not be got at the time it is wanted.

Pressure of
Water.

overcome, and the bather feels quite at his ease. On first entering the bath there is often a slight feeling of chilliness; this soon passes off and is succeeded by a comfortable glow which lasts during the remainder of the bath and for some time afterwards. Owing to the great bulk of water and its high specific gravity, there is, in some cases, a feeling of oppression over the chest and abdomen which renders it difficult for the bather to take a long breath with comfort, and the pressure on the chest walls causes the heart beat to be more distinctly felt. These symptoms need cause no alarm, as they are experienced more or less by all bathers and soon pass off. It is only in the first bath that they cause any inconvenience. Should this feeling be very pronounced it is well to walk quietly up the steps until the body is raised from the bath as far as the hips, then take two or three full, deep, breaths, and quietly return, when the unpleasantness will no longer exist.

Temperature
of Baths.

The temperature at which the bath should be taken is a matter of great importance. For the first two or three baths it should not exceed 96° to 99° F. If it is then found that they cause no inconvenience the temperature may be gradually raised to 100° or 101° F. In no case should they be taken at a greater heat without special direction. Experience has proved that more benefit is derived by a continuance of the baths at moderate temperatures than by a short

course at higher ranges. The diseases for which they are employed are often of long standing and cannot be expected to yield to their influence at once.

The proper time for remaining in the bath varies according to the nature of the case; ten minutes is a good time to start with, but full-blooded patients may find five minutes enough for a first bath. As the bather becomes accustomed to the treatment the time may be extended to fifteen or twenty minutes. Longer periods are not, as a rule desirable, though I have known a patient remain two hours in a bath at a temperature of 101° without discomfort.

Duration of
Baths.

On leaving the bath the attendant will "pack" the bather in warm sheets and towels and wrap him in a blanket spread for the purpose on a couch in the dressing-room, where he should repose for five or ten minutes. By this time the moisture is absorbed, and the wraps should, one by one, be put aside, and dressing slowly proceeded with. It is not, as a rule, advisable for free perspiration to take place after the bath, so that, if there is a tendency to it during dressing the bather should lie down and wait till he cools before completing his toilet. In cases where it is desirable that free perspiration should take place this is very easily brought about by lengthening the time in the pack. Before proceeding into the outer air it is always well to remain twenty or thirty minutes in the cooling-room provided for the purpose.

Packing.

In cold weather it is more prudent to return home in a closed carriage or Bath chair, and to stay in the house for the remainder of the day. In the case of very delicate patients I have adopted the Continental plan of removing them (thoroughly wrapped up in heated flannels, &c.) to their own homes, and placing them in bed for an hour or so after the bath. This is very easily arranged for those staying at the Grand Pump Hotel, by means of the lift connecting it with the New Royal Baths. It is a rule at the Mineral Water Hospital that all patients should remain indoors on the day of bathing, and I feel sure that the strict observance of this rule, combined with moderation in diet and obedience to orders tends greatly to help these poor people's recovery where their richer and more self-indulgent fellow-sufferers fail.

Duration of
Course,

The waters are so powerfully stimulating in their effects that for most people an immersion bath every second day is as much as they can stand. Unless acting under medical orders four of these baths a week is the greatest number that should ever be taken. Since the introduction of the Aix-les-Bains Massage douches, it is possible by alternating the two kinds of baths, to bathe daily. The time required to effect a cure by means of the Bath Waters varies greatly according to the nature of the case under treatment. In some, three or four baths cause a very marked improvement, while others, who will ulti-

mately derive great benefit, perceive no change until twelve to twenty baths have been taken. Cases of long-standing and deep-seated trouble are the most obstinate, but in the long run yield excellent results. Many authentic cases are on record where patients who have been carried helpless cripples to their first bath, have, after a surprisingly short course of the waters, been enabled to dispense with all assistance and return to their avocations entirely cured. *Three to five weeks is considered a fair course.* By that time, at least, the medical attendant will be able to judge whether all possible benefit has been gained, or if a longer course is advisable. A course of less than 8 to 12 baths is mere waste of time, and by failing to effect a cure in a disease which has probably lasted for years, is apt to bring the waters into disrepute, where a continuance of their use would, in all probability, have given satisfactory results. Improvement is often slow in manifesting itself, and some patients do not derive the full advantage of the treatment till a considerable period after it has been discontinued. In gouty and rheumatic subjects, where the waters fail to effect a cure, their use should still be preserved with in annual and biannual courses, as they tend greatly to retard the further inroads of the disease on the system; a result unattainable by any form of drug treatment.

* "When the waters are used as a bath the frequency

Effect of the
Baths.

of the pulse and the temperature of the body is increased, and subsequently the amount of the urinary discharge augmented. After the use of the bath, there is a consciousness of elasticity and vigour of the frame, and the appetite is improved. The exhausting perspiration and fainting which often follow the use of warm baths of ordinary water, rarely, if ever, occur after the employment of the mineral water, neither is its use productive (under ordinary circumstances) of the copious perspiration consequent on common hot baths. In cases where the limbs are stiffened or contracted by rheumatism, the power of moving them is greatly restored, and in many cases, it returns with remarkable quickness, by means of bathing. The same result also takes place in many cases of palsy, in which employment of the baths is allowable. Pain also is relieved during the use of the bath, as in sciatica, and though it, and the stiffness of the limbs often return, at first, soon after leaving the bath, it will be observed that the interval between employing the bath and the recurrence of pain and stiffness increases until they are entirely removed. In some cases, where bathing does not disagree, and yet does not produce any very appreciable effect at the time, it is advisable, after a proper trial, to cease from using the baths; for oftentimes relief or recovery follows after their employment has been discontinued, or after an interval their use may be resumed with manifest advantage."

Sufferers from gout and rheumatism must not be disappointed if after a few baths they seem worse. This symptom is due to the waters "bringing out" the disease, and is looked upon as one of the best results which can follow a trial of the waters, and is often the forerunner of relief and cure. Caution should, however, be exercised lest the stimulating properties of the waters should push matters too far, and convert a chronic state of disease into an acute one. After a few more baths a marked improvement will, in most cases, take place and continue during the remainder of the course.

DRINKING THE WATERS.

Along with the baths it is customary to order patients to drink the waters. That this is beneficial is proved by the fact that many, who for special reasons cannot bathe, derive great benefit by drinking alone. When fresh drawn, the water is clear, colourless and sparkling, without odour, and with a slightly saline chalybeate taste, in no wise unpleasant, and after a time relished, and even craved for, by invalids with whom it agrees. The quantity to be drunk daily should be divided into two portions, one to be taken early in the day, before breakfast if possible, and the other an hour before luncheon, or early in the afternoon. On the amount taken will

Dose.

depend the result. The old writers ordered the waters in very large doses, as much as three quarts daily ; given thus freely they act as a purgative, in small doses they are apt to produce constipation. It is now the custom to order from half a pint to one and a half pints daily ; this quantity should keep the bowels in regular action. To begin with the dose should not exceed 4 oz. to 6 oz. at a time, and if this is found to agree it should be gradually increased till the full quantity is reached. At the Grand Pump Room the water is served for drinking at a temperature of 114° Fahr., and should be sipped slowly till the stomach becomes accustomed to its use, otherwise nausea is apt to be produced. To derive the full benefit gentle exercise should be taken after each drinking. The late Dr. Falconer, who was a great authority on all matters connected with the waters, so ably describes their effects that I cannot do better than quote his opinion *verbatim*.*

Effects of
Drinking the
Water.

“When the waters are drunk fresh from the spring they raise and accelerate the pulse, increase the temperature of the body, and excite the secretions ; and these effects, which are generally manifested soon after drinking them, are more permanent than might at first be anticipated. They have a tendency to produce constipation when taken in small quantities,

*Falconer, “ The Baths of Bath,” page 39.

but the older writers mention their purgative effects; the dose, however, they administered amounted to one, two, or three quarts daily, which produced two or three copious evacuations. The ordinary quantity, namely, four, six, or eight ounces taken daily, tends to produce a regular action of the bowels, while the largest quantity will sometimes cause purging.

“The effects of the waters which indicate that they will prove beneficial by drinking of them, are a glow of warmth in the stomach, an increased appetite, an improvement of the spirits, an augmented secretion of the saliva, and an excitement of the urinary discharge, the latter constituting one of the best indications of their being likely to produce a good effect; next to which may be placed the rapidity with which they quench thirst. If, however, they produce headache, thirst, a dry tongue, a sense of weight in the stomach, diminish rather than improve the appetite, induce nausea and sickness, and fail to improve the flow of urine, they will be of no advantage unless this tendency to cause these effects can be obviated. This may in many cases be brought about by diminishing the dose, by altering the period of day at which they are taken, by allowing the water to cool before drinking it, and especially by relinquishing their use before breakfast. The employment for a short time of some diuretic remedy, conjointly with the water, will aid in deciding its effects so as to augment the flow of urine. But if

these changes are unattended by any corresponding result, no benefit can be expected from persisting in their use."

THE BATH WATERS.

The springs which yield the Bath Waters are three in number. The total flow equals 507,600 gallons daily, at a temperature of 117° to 120° Fahr. The source of the springs and the cause of their high temperature are still subjects of speculation; certain it is that both take origin at some distance from the earth's surface, as the flow is unaffected by the heaviest rainfall or the longest drought, and the temperature remains the same in the hottest weather in summer, or the keenest frosts of winter. It has been noted before that Natural Mineral Waters are more powerful in their effects than artificial compounds, even when containing the same ingredients in identical proportions. This is also true of Thermal Waters. Both at home and abroad many ingenious theories have been propounded to account for this peculiarity. No advantage that I can see is to be gained by discussing the how or why, it is better to estimate the capabilities of any given spa by the results of actual experience, than to waste time over abstruse theories which cannot be proved. The whole subject of Telluric heat is very little understood, but waters

deriving their high temperature from this source are found to cool more slowly than the same waters when heated by artificial means. Compared with other thermal springs noted for their medicinal properties Bath stands very high. Wiesbaden has a temperature of 158° ; Baden Baden, 153° ; Aix-la-Chapelle, 130° ; while Tiplitz and Gastein are very similar to Bath, the former being 121° and the latter 120° . The great majority of European springs have much lower temperatures. Of British springs none can compare with Bath in this respect, Buxton being its nearest rival, with a temperature of only 82° Fahr. The great difficulty in the case of the Bath water is to lower the temperature sufficiently for bathing purposes. This is accomplished by means of large tanks, where the water is cooled and then mixed with water direct from the springs, till the desired temperature is reached.

Seen in bulk, the water presents a light bluish-green tint, and as it issues from the spring is surcharged with gas which may be seen rising in large bubbles to the surface. In small quantities, fresh drawn, it is clear, colourless and sparkling, without odour, and with a slightly saline, chalybeate taste, in nowise unpleasant. When cold, the water loses the taste of iron, and can hardly be distinguished from ordinary hard spring water. On standing it becomes turbid by the separation of a light-brown precipitate of

oxide of iron, which after a time settles to the bottom and leaves it quite clear.

Sulis Water.

It is found that if the water, freshly drawn from the spring, be saturated with carbonic acid gas, this change of the carbonate of iron into the oxide does not take place. Taking advantage of this chemical fact, Mr. Cater, of this city, has been enabled to produce the water (under the name of *Sulis Water*) in a pleasant ærated form, and containing all its normal constituents, as the following analysis by W. W. Stoddart, F.C.S., will show :—

ANALYSIS OF THE BATH WATER FROM THE SPRING
AND THE BOTTLED AERATED WATER.

	Bath Water.	Aerated Water. (Sulis Water.)
Carbonate of Calcium	7'117	7'619
Sulphate of Calcium	94'091	93'764
Carbonate of Magnesium	'446	'651
Chloride of Magnesium	15'044	15'941
Chloride of Sodium	15'615	15'612
Sulphate of Sodium	22'547	22'536
Sulphate of Potassium	5'284	5'281
Carbonate of Iron	1'019	1'029
Silica	2'986	2'988
Total Contents per Gallon	164'149	165'421

This ingenious discovery, besides furnishing a pleasant, palatable, and safe table water, has put it in the power of invalids to continue with advantage the drinking of the Bath Water after they leave the place, a course which is usually attended with much benefit.

So many careful analyses have, from time to time been made of the Bath Water that there can be no doubt of its exact chemical composition. The older analyses bear so close a resemblance to those last made, that, allowing for the advance in chemical science and the more exact modes of investigation now in practice, the waters may be said to be the same to-day as they were one hundred years ago. Trifling differences have been recorded, but these are in all probability due to more accurate observation than to any change in the waters themselves. This conclusion is supported by the analysis of the deposit found in the pipes leading to the Roman Baths recently excavated, which is found to be identical with the deposit taken from the pipes now conveying the water to the baths. No chemical analysis, however carefully conducted, can determine *a priori* the exact medicinal properties of a water; the effect depends, not so much on any one mineral ingredient, as on the union of several, and that too in some peculiar way which can never be imitated in the laboratory. Having determined the chemical composition, we are still, to a great extent, in the dark, for each thermal spring possesses some inherent property peculiar to itself.

In selecting one spa rather than another as a curative agent in any particular disease, a medical man is guided, not so much by the mineral ingredients

it contains (unless they are present in very large amount as in the salt baths of Droitwich), as by the combination of a number of ingredients, the general character of the waters as regards hardness or softness, their effect on the system generally, and above all the recorded evidence of credible witnesses as to their power of effecting cures in the cases for which they are prescribed.

The following is the official analysis published by the Corporation :—

ANALYSIS OF THE BATH MINERAL WATER.

CONSTITUENT PARTS IN 100,000.		Merck & Galloway.	Mackay Heriot F.G.S. (Captain, Royal Marine Light Infantry).		
		King's Bath	King's Bath	Het. Pump.	Cross Bath.
Calcium	Ca.	386·7	377	401	388
Magnesium	Mg.	53·9	47·4	52·2	46·8
Potassium	K.	39·8	39·5	31	37·5
Sodium	Na.	160	129	137	140
Lithium	Li.		Traces	Traces	Traces
Iron	Fe.	7·4	6·1	6·7	4·5
Sulphuric Acid ...	S O ₄	1029·5	869	884	895
Carbonic Acid (combined)	C O ₃	86·9	86	89	83·5
Chlorine	Cl.	265·3	280	275	280
Silica	Si. O ₂	42·6	30	39	38
Strontium	Sr.		Traces	Traces	Traces
Alkaline Sulphides			Traces	Traces	Traces
Carbonic Acid Gas	C O		65·3	80·4	51·5
Total Solid contents		2062·1	1864·0	1911·9	1913·3
Specific Gravity ...			1·0015	1·0022	1·602

TEMPERATURE—King's Bath, 117° F. ; Hoth Bath, 120° F.
The Nitrogen daily evolved from the springs amounts to about 250 cubic feet.

The chief ingredients of the Waters in an imperial gallon are—

- (1) Sulphate of Lime 70 grains.
- (2) Sulphate of Magnesia 35 grains.
- (3) Chloride of Sodium $17\frac{1}{2}$ grains.
- (4) Carbonate of Soda 14 grains.
- (5) Carbonate of Lime $8\frac{1}{2}$ grains.
- (6) Chloride of Potassium $1\frac{3}{4}$ grains.
- (7) Carbonate of Iron 1 grain.

And in smaller quantity Carbonate of Magnesia, Silicate of Soda, and traces of Arsenic, Copper, Lithium, Strontium, Ammonia, and Alumina.

The quantity of Iron detected by analysis is comparatively small, but it is sufficient to give the water its characteristic taste, and to stain dark yellow or nearly brown the glasses in which it is served. Prof. Attfield, in the most recent analysis, puts the amount of carbonate of iron in each imperial gallon of the water as 1.217. It has been found by experience that iron in very small quantities, freely diluted in Natural Mineral Waters produces its physiological effects sooner, and gives better results on the whole, than much larger doses as usually prescribed. Tunstall makes the following interesting note* :—

* See Tunstall on "The Bath Waters," page 13.

"Analysis of the Blood and the Bath Waters shows that many of their constituents are identical, and I am led to believe that this explains why these waters are so beneficial in disordered conditions of the circulating fluid. There is a great analogy between a vital and a thermal fluid ; no natural fluid, not produced from the blood itself, so much resembles it as the Bath Waters ; and I have always been of opinion that this will explain their beneficial effects in the restoration of debilitated conditions where no active inflammation exists. Persons who have long been confined by protracted suffering from rheumatism or other chronic ailment to a room not exposed to fresh air or the direct influence of the sun's rays, become gradually enfeebled, their blood loses many of its normal elements, it becomes black and unoxygenated, and if, as I frequently saw during my residence at the Mineral Water Hospital, this fluid were changed into one of a florid and healthy hue, I am strengthened in my conclusion that the restoration to health was due to the free administration of the Bath Waters."

By comparing Bath with some of the Continental spas, that have long enjoyed a reputation for the cure of the diseases most effectually treated here, it will be seen how far it excels them as regards chemical constituents.

IN EACH IMPERIAL GALLON.

Bath, England ...	...	168.40 grains.
Teplitz, Bohemia ...	...	48.74 „
Warmbrunn, Silesia ...	...	40.38 „
Wildbad, Württemberg ...	...	35.87 „
Gastein, Tyrol ...	...	26.68 „
Pfeffers, Switzerland ..	..	26.21 „
Römberbad, Styria ...	...	22.37 „
Plumbières, France ...	...	20.17 „

I think it may be interesting to make a closer comparison between the Bath Mineral Water and that of its greatest English rival—Buxton ; for this purpose the most recent and trustworthy analyses are chosen :—

Bath and
Buxton
Waters.

In an Imperial Gallon or 70,000 Grains.				Bath.	Buxton.
Carbonate of Lime ...	...	...	...	9.001	9.185
„ Magnesia ...	...	...	...	0.399	4.746
„ Iron ...	...	...	...	1.217	0.037
„ Soda ...	...	...	...	15.017	...
Sulphate of Ammonium ...	...	...	...	..	0.014
„ Lime ...	...	...	...	69.984	0.673
„ Potash ...	...	...	...	6.702	0.678
„ Magnesia ...	...	...	...	35.042	...
„ Soda ...	...	...	...	23.140	0.202
Chloride of Sodium ...	...	...	...	17.894	4.517
„ Potassium ...	...	...	...	1.823	...
Silicate of Soda ...	...	...	...	0.399	...
Nitrite of Lime ...	...	...	...	1.562	0.266

The total solids held in solution in each imperial gallon of the Bath water amounts to 168 grains; in

the Buxton water only 21 grains are found in the same amount. The above comparison shows how closely the two waters resemble each other, and brings into prominence the fact that *the Bath water is eight times richer* in those mineral ingredients which give to both their healing properties.

Besides mineral constituents, the Bath water is rich in certain natural gases. Professor Attfield, in a recent analysis, gives the following results:—

NATURAL GASES IN EACH IMPERIAL PINT OF THE BATH THERMAL WATER.

				Cubit Inches.
Oxygen Gas	...	...	...	'74
Nitrogen Gas	...	...	...	4'60
Hydro-Carbon	...	...	...	None
Carbonic Acid Gas	...	...	...	4'17

Carbonic
Acid Gas.

It is to the presence of this large quantity of *Carbonic Acid Gas* that the water owes its bright sparkling appearance when fresh drawn, its pleasant sharpness of taste, and its power of holding in solution so large a quantity of iron in the form of carbonate, which is one of the most unstable forms and, at the same time, one of the most easily assimilated and most efficacious from a medical point of view. The gas itself is a powerful stimulant to the nervous system, and possesses the power—especially when

applied to the surface of the body held in solution by a thermal water—of restoring pliability to joints stiffened by attacks of gout and rheumatism, and also of relieving paralysis.

The quantity of free nitrogen evolved from the Bath springs amount to 259 cubic feet daily, being nearly 97 per cent. of the total gaseous matter yielded by them ; a proportion unequalled by any other spring in Europe. It is difficult to explain the precise manner in which free nitrogen acts on the animal economy in health and disease. It has been asserted that nitrogen is as necessary to exalt and hasten the action of the healthy building up of muscular and other tissues, as hydrogen is to assist the action of oxygen upon the giving of animal heat to the body. When we consider the large quantity of the gas which is at all times present in the blood, and in the organs and tissues of the body ; and that no dietary scale, however rich in other ingredients, will support life for any length of time without a due proportion of nitrogen, we must conclude that it plays a very important part in the maintenance of health. Experience has proved that whenever a mineral water contains free nitrogen its administration will prove beneficial in gout and rheumatism, and that the amount of benefit derivable, other things being equal, will be in direct proportion to the amount of the gas which the water contains. Dr. Sutro, writing on this subject, makes the following

Nitrogen.

interesting observations :—"If we see the use of a mineral water causing distinct retrogression of anti-vital phenomena ; if we perceive gouty concretions to proceed towards absorption ; if we observe contracted limbs gradually to relax again, and to try feeble efforts of long-forgotten exercise ; if we find cutaneous harshness and rigidity to diminish, and to give way to a former softness ; if we behold a resuscitated desire for muscular exertion and for mental work in a prostrate individual, and we know the spa, the originator of these changes, to possess a great quantity of nitrogen, is it not legitimate to attribute to this gas part of the efficiency?"* Bath and Buxton in this country are examples of the truth of this statement ; and on the Continent the famous German spring of Wildbad (so much frequented by gouty and rheumatic subjects, with a temperature of 98° F., and evolving 91 per cent. of nitrogen, or 6 per cent. less than is yielded by the Bath springs), affords a further example. Few places can compare with Bath in the lucky combination of so large a quantity of nitrogen along with many mineral ingredients well known for their medicinal properties, and in consequence, as might be expected, few spas can rival it in its efficiency to correct abnormal conditions and to replace diseased with healthy structures.

* German Mineral Waters, page 69.

Massage.

Massage forms so important a factor in the treatment of a number of my patients, that I feel this little book would be incomplete without a description of the mode of procedure, and a brief outline of the class of cases likely to derive benefit from its employment. The name is, according to Savary, derived from the Arabic word "Mass," to press softly. This form of treatment has only lately been reintroduced into Europe, but from the earliest ages it has been much employed in the East. It is said to be described in a Chinese MS., which bears date 300 B.C., and is also mentioned in the works of Celsus, Hippocrates, Galen, and other fathers of the healing art. Lady John Manners contributed a very interesting historical account to the "Nineteenth Century" for December, 1886, to which I would refer those interested in the subject.

Antiquity.

My first experience of massage was gained while travelling in the wilds of Upper Burmah, where it is practised by the natives as a treatment for the sick, and also as a courtesy to their European guests when suffering from the fatigue and exhaustion which are so apt to follow any exertion in that trying climate. Properly used, in skilled hands, it is a powerful agent for good. This fact is being generally

recognised. The danger which threatens it is not so much from any want of appreciation of its merits, as from the unwarrantable manner in which some of its votaries puff it as a "cure all," and from the number of persons who practice it without the most elementary knowledge of anatomy, or the vaguest notion of what

Definition. massage, properly so called, means. Dr. Murrell* defines it as "a scientific mode of treating certain forms of disease by systematic manipulations," and goes on to say:—

"The manipulations are carried out systematically, in definite order, and with a definite object. In medical rubbing, these conditions which are essential to massage, are considered to be of no importance, and the operator simply rubs and pummels the patient, without any regard to the anatomical arrangement of the parts, and usually without any very definite object. To perform massage a knowledge of anatomy is essential, whilst for rubbing and shampooing, physical strength and endurance, with a certain knack are all that is necessary. Shampooing is very useful in its way, but it is not massage, and can never take the place of massage. There is as much difference between massage and shampooing as there is between playing a difficult piece of music and striking the keys of the pianoforte at random."

* "Murrell on Massage," page 14.

Massage is always difficult and tedious to learn, and some can never acquire the art. The peculiar delicacy, and yet firmness of touch, necessary for the best work is a natural gift like music or painting, and is given only to the few. True, the highest class of work is not always necessary, and a wide field of usefulness is open to all well trained and conscientious workers. The popularity of the treatment has brought forward a number of so called "professors" of massage many of them with high sounding foreign names: in ninety-nine cases out of a hundred, they are ignorant, untrained, and unscrupulous, but on the whole plausible cheats, who simply work on the credulity of their patients, and trusting to their ignorance, and the natural desire of all sufferers to be relieved of their maladies, practice the most arrant quackery. The public would do well to give all such a wide berth. Massage is not a distinct and special form of treating disease, but like electricity, bathing, horse exercise, &c, it does, in skilled hands, form a very useful adjunct to general treatment. It should be a rule with all invalids never to resort to it unless ordered by a recognised and competent medical man, and where it can be carried out under his supervision. Nor should they, unless under very exceptional circumstances, be masséed by members of the opposite sex.

Dangers
threatening
Massage.

In selecting a masseur or masseuse some care is necessary. They should be well educated, of a

Selection of
Attendant.

refined and sympathetic nature, and bright cheerful manner, with confidence in themselves and the power of their work to do good. They should be in good bodily health and muscular training, and should never attend a patient when fatigued, or if suffering from mental excitement or depression. The hands should be large and powerful, but soft and pliable. To keep them in good condition no rough work should be engaged in. It is a good plan to wash them at bed-time with oatmeal; or, having washed with a good pure soap and water, to thoroughly rub in a small quantity of glycerine and rose water in equal parts.

Several authors advocate the use of oil, or some other lubricant when performing Massage, but this is contrary to the teaching of the best authorities, both at home and abroad, who advocate "Dry Massage." The writer has tried both, and unhesitatingly gives his opinion in favour of the latter. Dry Massage can claim the following advantages. (1) A better grip of the part. (2) A greater increase of circulation and consequent rise of temperature. (3) More perfect muscular contraction. (4) The rapid development of electrical currents which in no small degree account for the benefit derived from this form of treatment. In hot weather, or where the hand of the operator becomes damp, Dr. Eccles recommends their being dipped into cold water, dried, and held above the head for a minute or so. The sparing use of some

simple dusting powder may be necessary. Fecule de pomme de terre is perhaps the best.

The time occupied in each operation varies in different cases. It must be regulated by the strength of the patient, and whether the whole body or only a limited portion requires treatment. For a single joint 4 to 10 minutes is quite enough, and for the whole body 15 to 30 or 40 minutes should suffice. The first effect of firm general Massage is stimulating and exciting, but if too long continued it is apt to produce lassitude and exhaustion. I recently verified an experiment which had been formerly made in proof of this fact, by subjecting a strong, healthy young man to Massage. At the end of 12 minutes the pulse had risen from 76 to 104 beats per minute, and to use his own expression "he felt fit for anything." Continuing the process for 20 minutes longer the pulse had fallen to 62 beats per minute, was rather soft and feeble, and he complained of being fatigued and inclined to sleep. The length of time during which Massage can be borne, and the result obtained, greatly depend on the amount of force and energy used by the operator. It is often more prudent to give a short manipulation and repeat it twice or even three times daily, than by continuing too long at one sitting, to run the risk of exhausting your patient. Massage should never be practised immediately after a meal, or when the patient is

Duration of
Operation.

Effect of
Massage.

hungry. Mental excitement and depression are also counter-indications for its use.

It is impossible to teach Massage by a written description, but some idea of the process may be derived from an account of the *modus operandi*. The treatment consists of several different manipulations, which are grouped together under the one word "Massage," *Effleurage* or *rubbing* is the most simple. It consists of a stroking movement over the surface of the body, varying in force from the slightest touch with the flat surface of the palm, to strong pressure with the ball of the thumb, the outer edge of the hand, or the finger tips; the movement always being in a direction which will accelerate the flow of blood towards the heart. In the limbs it is useful to encircle as much of the part as possible between the first finger and thumb, and grip the part more or less firmly while performing the upward movement. The speed at which these stroking movements are made, and the interval elapsing between each, will vary with the requirements of the case. The most rapid work can be done by employing both hands, bringing the one to the position of starting just before the other finishes. This may be called *overhand rubbing* and has a powerfully exhilarating effect.

Pétrissage.

Pétrissage, *kneading*, or muscle squeezing, consists in taking up a portion of skin and the tissues lying

under it, and firmly rolling and kneading them between the fingers and thumb of one or both hands, at the same time moving slowly onward in the direction of the venous current. As some one has said, it is a movement very similar to that which would be employed in emptying a sausage of its contents. Where a muscle, or group of muscles is being manipulated, the whole, or as much of it as possible, should be gripped in the hand, and the kneading, begun at the lower end, be carried on throughout its entire length before the hand is relaxed. In large and deep parts it is best to use both hands, carrying one just in front of the other. This and the last movement are nearly always used in conjunction, the one alternating with the other.

Massage a Friction, not of so much consequence as effleurage or Pétrissage, is used chiefly for the joints, and consists of a double movement, one hand making rapid circular strokes across the part, while the other performs strong friction in the long axis of the limb. The movement requires to be very quick to have much effect.

Massage a
friction.

Tapotement or *Percussion* very nearly describes itself. A number of sharp, light blows is made over the part, in rapid succession, either with the tips of the fingers, the outer edge of the hand, the hand closed, or held semi-flexed, so that a cushion of air intervenes between the part struck and the hand of the operator.

Tapotement.

Abdominal
Massage.

Modifications of the above have to be made to suit the requirements of different parts of the body, but these do not require special notice, with the exception of Abdominal Massage, and here a word of caution may not be thrown away. Where so many delicate and vital organs lie almost immediately under the hand, the utmost caution must be exercised, or serious injury may result. Abdominal Massage differs essentially from Massage of other parts of the body, in the fact that it depresses the heart's action, decreasing the number of heart-beats and lowering the blood pressure generally. This is due to stimulation of the great nerve centres, also to the large quantity of blood which becomes temporarily stored in the abdominal vessels, leaving less for circulation elsewhere. A sensation of chill over the surface of the body and in the extremities, with an inclination to shiver, is experienced, even when the body is warmly covered up. The balance of circulation can, however, easily be restored by quick, firm effleurage of the extremities. It is well to bear this fact in mind, and where general body Massage is ordered, to commence with the abdomen. Deep kneading and tapotement of the abdomen are found very useful in dispersing flatulence, and also have a powerful effect in relieving constipation. For this purpose the horse-shoe curve of the colon should be followed from right to left. Ten to fifteen minutes' work will generally have the desired effect.

Healthy people do not require Massage, but it will be found very refreshing when over-fatigued and exhausted by some great muscular effort. The Roman gladiators used it after their encounters in the arena.

The physiological effects of Massage depend greatly on how it is done, and also, as has already been shown, on the length of time for which it is practised. Dr. Eccles has pointed out that the first effect of gentle surface rubbing is to cause goose-skin by the stimulation and contraction of the surface muscles. This soon passes off, and the circulation in superficial parts become hastened, causing a rosy blush on the skin. With firmer and deeper rubbing the whole circulation becomes accelerated and the heart-beats hastened. Kneading has the opposite effect on the circulation, lowering the number of heart-beats per minute. A large quantity of blood passes through the part under manipulation, in other words it receives an increased supply of its natural food, and thus its nutrition is improved. Exercise produces the same result, but to many invalids exercise is impossible, or can only be indulged in to a limited extent; for all such Massage is an invaluable substitute. In very weak and delicate subjects it is better than exercise; being practised with the body in the recumbent position, and without any exertion on their part, the beneficial results are

Physiological
Effects.

Effects of
different kinds
of Massage.

obtained without the risk of fatigue or exposure. The effect on the circulation varies with the form of Massage employed, as is very clearly demonstrated by the following quotation from Dr. Eccles:—"A healthy man, æt 28, before Massage had a pulse-rate of 75 per minute, after 'rubbing' (*effleurage*) for ten minutes the general surface of the body, the pulse rose to 100; 'kneading' excluding the abdomen, was then practised for twenty minutes, at the expiration of which period the pulse fell to 92, after rapid rubbing of the limbs and back was substituted for ten minutes the pulse rising to 102. Abdominal Massage only was then performed for less than ten minutes, and the pulse-rate was found to be reduced to 74 per minute."*

The surface temperature of a part Masséed can be raised from 10° Fahr. to 20° Fahr., and this increase is maintained for a considerable period after the treatment is discontinued. This is an important point to note in the treatment of many forms of paralysis.

Effects on
Lymphatics.

Together with the increased blood circulation there is a corresponding hastening of the flow of lymph through the lymphatic vessels. Now as this lymph consists of the fluid elements of the blood, after it has done its work of nutrition, plus the effete and waset

* "The Physiological Effects of Massage," p. 7.

products of the tissues, it can easily be understood how desirable it is that its removal should be as speedy as possible. Massage exerts a powerful effect on this lymphatic circulation, both on account of the mechanical pressure on the vessels, and also by the resulting muscular contractions forcing the fluid from the lymph spaces between the muscle fibres and sheaths. This fact is abundantly proved by the decrease which takes place in the circumference of a limb as a result of a few minutes' firm massage. If further evidence were wanting it is supplied by Professor von Massengeil's beautiful experiment. Having injected Indian ink into both knee joints of a rabbit, he carefully masséed one limb several times, leaving the other alone. After about thirty hours the rabbit was killed and both knee joints examined. In the leg which had been masséed the Indian ink was all removed from the knee joint, being stored for the most part in the lymphatic glands. In the other leg the joint remained full of the fluid, and none of it was found in the glands. In Germany a strong feeling exists that this increased lymphatic circulation is the chief reason for the benefit derived from Massage.

The effect of Massage on the breathing is to slightly hasten it. At the same time it becomes deeper, more air entering the lungs with each inspiration. With an increased pulmonary circulation, and a better supply of air to the lungs, the removal

Effects on
Breathing.

of waste matter, especially carbonic acid, is facilitated, the blood becomes more perfectly ærated and purified, and this again tends to increase the general vitality, and improve the condition of the patient.

Effects on
Nervous
System.

Massage acts powerfully on the nervous system ; when soft and gentle (especially as effleurage) it is sedative and soothing, and if persevered with will generally produce sleep. Firmer Massage is bracing and exhilarating, causing a feeling of increased vigour and vitality. Langour and depression disappear, the spirits rise : the brain becomes clear and active, with a general feeling of go, and the desire to be up and doing. The nutrition of the nerves improves as is the case with the muscles. When Massage is too prolonged, or practised more forcibly than the condition of the patient warrants, these pleasant sensations are changed for a feeling of restlessness, exhaustion, and prostration ; and feverishness is apt to supervene. It should be the careful study of the operator to stop short at the proper time. If a manipulation of ten minutes is all that can be borne, let ten minutes suffice, rather than do harm by continuing for twenty.

Effects on
Muscular
System.

It is the muscular system upon which Massage exerts the most marked and permanent benefit. When a muscle is well masséed from end to end, having its fibres pressed, squeezed, and rolled together, a very decided change takes place in its condition. From being inactive it is thrown into activity,

contractions taking place in the individual and conglomerated fibres. These contractions have a pump-like action, along with the mechanical help from the hand of the operator, forcing the blood from the capillaries into the veins, and again acting on the veins, the flow of return blood to the heart is accelerated. A similar effect is produced on the lymphatic system. Whether through nerve energy, or as a result of direct stimulation the arteries of the part enlarge, and thus the muscle receives an increased supply of blood. All muscular action results in chemical change, new elements are stored up, and waste products cast off, thus the nutrition of the part is improved, the muscle becoming firmer and stronger.

The electrical contractility of a muscle is greatly increased by Massage, and by its employment both power and electrical contractility can be restored when these have been temporarily lost by over fatigue. Zabłudovski, Reibmayr, Eccles, and Graham have, by their researches, placed these facts beyond dispute. They can be very easily demonstrated by the following simple experiment. Place a dynamometer (an instrument for testing the power of the hand) in the hand of a strong, healthy man, and cause him to squeeze it with all his force fifteen or sixteen times a minute: the grip, which at first will register about 180 lbs., gradually becomes weaker as the muscles get tired. After a time, varying with the strength of the

Electrical
Contractility.

subject, muscular exhaustion is produced, so that the most powerful effort will hardly cause the index to move, and a feeling of dull ache is experienced throughout the arm and hand. Now test with the electric current, and the galvanometer will show that fifteen to eighteen milliamperes are required to obtain a response. Rest the arm for ten minutes, by which time power will have slightly returned, but only sufficient to show 8 or 10 lbs. pressure with the dynamometer, and fourteen or fifteen milliamperes are still required to cause muscular contraction. Again exhaust the arm by squeezing the dynamometer, then practice Massage for ten minutes, and once more apply the same tests. It will be found that 50 or 60 lbs. pressure can be exercised, and with five or six milliamperes a muscular response is obtained. The feeling of fatigue will also have disappeared.

In gouty and rheumatic subjects, as well as in many others debarred from taking free muscular exercise, a careful examination will demonstrate the existence of a number of hard, thickened, and highly sensitive spots throughout the soft tissues of the body. They are frequently to be found in the muscles of the neck and shoulders, and also in the long muscles of the back, where they give rise to a species of back-ache; over the outer surface of the upper arm and deltoid muscle the tissues are often so much matted together as to have quite a hard brawny

feeling, and are very sensitive. This is especially the case in stout subjects, and more frequently met with in women than in men. Beveridge, of Edinburgh, pointed out many years ago that these thickenings could be "rubbed away." I have never known Massage fail to greatly relieve, if not entirely remove them.

Dr. Graham credits Massage with considerable influence on the catamenia, stating that it increases the quantity and shortens the interval between the periods.

Catamenia.

In many cases the benefit derived from a course of Massage is considerably enhanced by the judicious employment, along with it, of electricity ; movements, active and passive ; and regulated pedestrian and horse exercise ; while nothing should be neglected to secure to the patient the most healthy and pleasant surroundings, both of body and mind.

To sum up, in suitable cases, Massage can very rarely do harm when practised by a skilled operator, and in a large number of cases it is a most valuable accessory to treatment. Under its influence lassitude and inertia disappear, the spirits rise, the mind becomes clear and hopeful, and the power for mental work increased. The bodily condition is equally improved ; the blood circulates more freely ; the appetite improves, and becomes less capricious ; tranquil and refreshing sleep is more easily obtained ;

To Sum up.

all the secretions of the body become more natural and free ; the muscles regain their lost power and elasticity ; and exercise, instead of being a labour becomes a pleasure. When we find such results as these accruing from a treatment it is impossible to disregard its efficiency, and nothing short of bigotry to refuse to employ so potent an agent for the relief of human suffering.

*Diseases in which Massage is found
Beneficial.*

Having written much more fully than was at first intended on Massage generally, a short description of the diseases in which it is useful must suffice. As a rule it is in the chronic rather than the acute stage of disease that it is employed, and that only in carefully selected cases.

Rheumatism I place first, not because it is most Rheumatism. important, but because, practising in Bath, it is in this disease that one has the most frequent opportunity of judging of its results. In all its forms, articular, muscular, and neurotic, when in a chronic or at least in a sub-acute stage, Massage is a most useful adjunct to thermal and other forms of treatment in shortening the attack, and hastening the recovery of the patient. In *acute articular Rheumatism* while inflammatory symptoms remain it is not admissible, but when these have disappeared, it is most valuable in removing swelling, thickening, and effusion, and also in restoring the function of the part. In *chronic articular Rheumatism* it has a powerful effect in lessening deformity, and restoring pliability to the thickened and stiffened joints. Where ankylosis or bony union has taken place in a joint, Massage or any other treatment save an operation must fail to

restore movement, but in anything short of this perseverance will bring about improvement: the most gratifying results are often obtained in the most unpromising cases. Massage in or after a hot bath, or in combination with douching, is often more beneficial than, in these cases, dry massage. In *muscular and neurotic Rheumatism* care must be exercised not to use too much force. To begin with, mild effleurage is quite sufficient; firm effleurage and pétrissage may be employed as improvement takes place, and when their employment is found not to cause pain. During acute rheumatism, the high temperature and confinement to bed play great havoc with the muscular system; and in chronic rheumatism when want of exercise has had the same effect, Massage is found most useful in restoring this loss of tone.

Gout. *Gout* in its chronic forms. All that has been said of rheumatism applies with equal truth to gout. After a typical attack of gout in the foot, when the pain and inflammation have subsided, there frequently remains a considerable amount of tenderness, effusion, and swelling. Carefully conducted Massage hastens the removal of these unpleasant sequelæ.

Paralysis. *Paralysis* in nearly all its forms is benefited by the judicious use of Massage. In *infantile paralysis*, in combination with electricity, it is undoubtedly the best treatment we possess. Under its employment the wasted limbs increase in size, the local tempera-

ture, raised many degrees during the manipulation, is slow to lose the effect, the muscles improve in tone, by degrees regaining electrical contractility, and ultimately voluntary motive power. Recovery is always slow, but worst in those cases where much time has elapsed between the attack and the commencement of treatment. In *hemiplegia*, caution must be exercised not to hasten the circulation to any great extent for fear of causing a second attack. Pétrissage is therefore the best form to employ in these cases.

Locomotor ataxy cannot be cured by Massage, but much may be gained by its employment. In the early stages it checks loss of power, and later on, by helping the circulation, lessens that feeling of unrest and uneasiness which is such a distressing accompaniment of this grave malady.

Hysterical paralysis, whether affecting the whole body or any part of it, is greatly relieved by Massage as is also *paralysis due to injury to a nerve*. It lessens muscular degeneration, and when the nerve power is returning hastens the recovery of the function.

Spinal irritation and spinal tenderness are both suitable cases for the Masseur. Firm effleurage should be employed on both sides of the spine throughout its entire length ; avoid the spine itself, but begin about one inch on each side of it. Pétrissage of the long muscles of the back should

Spinal
Affections.

**Spinal
Affections.**

also be used, both movements being carried on in an upward direction. Those obscure nerve pains, sometimes met with in parts far removed from the spine, which are a common result of spinal irritation, yield to Massage where they fail to respond to local treatment.

Cerebral and Spinal Exhaustion in all their manifestations, and whether caused by disease, overwork, or fast living, are greatly benefited by Massage. Of course it is best to remove the predisposing cause, but where this is impossible, it will be found that an amount of strain can be borne with impunity while undergoing a course of Massage, which, without its aid, would have been impossible, or would have been followed by serious exhaustion.

Insomnia.

Insomnia, resulting from overstrain, is well treated by Massage. The séance should, in these cases, take place at bedtime. Begin with firm general Massage, and finish with gentle effleurage. The patient will sometimes fall asleep under the process. Where brain congestion is the cause of sleeplessness, abdominal Massage is most useful.

**Nervous
Affections.**

Chorea, Hysteria and Anæmia are all benefited by Massage. The variety in these diseases is so great that special directions are impossible without entering into great detail. Each case must be judged by itself and treated accordingly.

Lumbago, Sciatica, Tic-douloureux, in fact all kinds

of neuralgic nerve pains, both acute and chronic, are greatly relieved by Massage. In acute cases very gentle manipulations must be employed at first. Begin at some distance from the seat of pain, and gradually work towards it, increasing the pressure as the pain subsides, and the patient can bear it. The treatment should be sedative; an amount of force which causes pain is more likely to do harm than good.

In *headache*, especially of a congestive type, Massage is a useful treatment. Begin with firm pétrissage and effleurage of the shoulders and upper part of the back, and finish with effleurage of the neck in a downward direction, especially over the jugular veins. Headache.

Dyspepsia, *constipation* and flatulence, whether in conjunction or as separate troubles, derive benefit from Massage. Pétrissage of the abdominal muscles, a combination of this movement with effleurage of the bowels—special attention being directed to the ascending transverse and descending colon—will generally disperse flatulence, and cause the bowels to act in about fifteen minutes, and after a time will induce regularity of action. This result is brought about by (1) increased peristaltic action, (2) augmented glandular secretion, including that from the liver, (3) mechanical movement of fæces. A great deal may be done to *educate the bowels*, by trying to obtain relief at the same hour daily. Stomach Derangements

Corpulence
and
Emaciation.

Corpulence and Emaciation. It seems strange that two complaints, the one the direct opposite to the other, should be benefited by the same treatment, but such is the fact. The cause of improvement is the same in both cases, namely, improved nutrition. A lady under my own charge who weighed 18st, 3lbs., after five weeks Massage scaled only 17st. 5lbs., and at the end of another month, though Massage had been discontinued, had gone down to 16st. 8lbs. On the other hand I have seen a highly hysterical young woman, who suffered extremely from emaciation, gain 4lbs. weekly during six weeks' Massage, and that without the frequent meals and forced diet which forms so important a part of the Weir Mitchell system.

In *general debility and convalescence* from many diseases, both acute and chronic, Massage forms a useful addition to the usual treatment of such cases.

Heart
Disease.

Heart disease. In certain cases of valvular disease Massage is very useful, helping the circulation, and supplying the benefits of exercise without the strain on the heart. In *dropsy of the feet and legs* and *varicosity of the veins* due to valvular incompetency, Massage gives great relief for the time being, but is not curative.

Uterine
Diseases.

Uterine disease. Some authors recommend Massage in certain forms of uterine disease, and also in sub-acute and chronic ovarian inflammation. Having had no experience of it in such cases, I can do no

more than mention the fact. From time immemorial, however, it has been used by those who knew nothing of it in other respects, as a treatment of *post-partum hæmorrhage*. For this purpose the flaxid uterus is grasped in one or both hands through the abdominal tissues, and firmly squeezed, rolled, and masséed until muscular contractions are induced and the hæmorrhage checked.

Poisoning. Dr. Murrell considers Massage of so much importance in the treatment of narcotic poisoning that he devotes a chapter of his book to the subject, and recommends it in acute and chronic chloral poisoning, poisoning by lead and morphia, and even in chronic nicotine poisoning from over-smoking. Again I must say I have no experience of its use in such cases.

Poisoning.

Surgical affections in which Massage is beneficial, though not so numerous as medical cases, are yet sufficient to render it an important factor in treatment. It is mostly in chronic cases that it is employed, but there is one notable exception, namely *sprains*, where the sooner the treatment is begun the better the result; care being taken to use very gentle manipulations at first. The time occupied in effecting a cure is shortened quite two-thirds by Massage, as compared with rest, fomentations, &c., as formerly employed. Dr. Douglas Graham's average time for recovery, in over 300 cases treated by Massage, was

Surgical
Affections.

Surgical
Affections.

nine days against 26 days in cases treated on the old plan.

In *contusions* the treatment should be started as soon as effusion has ceased. The discolouration, swelling, and pain can generally be got rid of in three or four days. Many *chronic joint affections* are greatly benefited by Massage, whether the case is characterised by effusion and swelling, or is one simply of stiffness and loss of function, due to diseases like gout and rheumatism, to injury, or to forced immobility while wearing splints. In these cases active and passive movements are a great help.

In *fractures*, when the danger of displacing the fragments has passed, Massage hastens union and the absorption of callus, at the same time preventing the muscular degeneration which would otherwise take place. The benefit of Massage is nowhere better demonstrated than in that important class of cases, including *lateral curvature* of the spine (not due to diseased bone), *wry neck*, *club foot*, and *flat foot*, which if left alone, invariably lead to deformity. These cases begin in one of two ways : (1) Involuntary spasmodic contraction and stiffening of a single muscle or group of muscles acting together. (2) The gradual loss of power in one set of muscles, from want of proper exercise, or the lengthened use of some unnatural position, so that the corresponding muscles become too strong, and instead of maintaining the

equilibrium, overcome their weak resistance, and thus lead to deformity. In very chronic cases of club foot and wry neck it may be necessary to divide the contracted muscles and tissues before resorting to Massage, but the ultimate recovery of the case will depend, not so much on the operation, which is of the simplest nature, as upon the amount of skill and perseverance with which Massage and exercises are carried out. The time when hours of inactivity in the recumbent posture, and the wearing of irksome and cumbersome supports were considered the proper treatment for lateral curvature of the spine has happily passed away, and these cases are now much more comfortably and scientifically treated by Massage, electricity, and regulated exercises, directed to the strengthening of the weakened muscles, so that, by their increased power, they may be able to resist the muscles of the opposite side, thus maintaining the equilibrium, and curing the complaint. In many *minor surgical* affections Massage may be usefully employed, but these do not call for special mention.

In conclusion, I would again urge that Massage is not a special and distinct mode of treating disease, but should be used as an adjunct to whatever general treatment the case may demand.

Extracts from the Visitors' Book.

The following are a few cases taken from the many thousands in the visitors' book, which bear testimony in favour of the Bath Waters. The well-known social standing of the writers is the best proof of their genuine character:—

Bath.

I am glad to add to the experience of others of the benefits derived from the use of the thermal waters, used both internally and externally. For many years I have been accustomed to send here invalids, rich and poor, hospital patients affected with inveterate (as it seemed) rheumatism, gout, and, now and then, a paralysed case apparently of rheumatic origin, and never knew a case return to London that was not cured or greatly benefited.

I also desire thankfully to acknowledge the benefit I have personally derived from five weeks' use of the waters under the guidance of one of the able physicians of this city, in the cure of an obstinate attack of rheumatic gout of two months' standing. The first bath procured me relief from suffering and refreshing sleep. I have now recovered my accustomed strength. I cannot speak too highly of the general arrangements for the use of the waters, and especially of the well directed zeal and attentiveness of the attendants.

W. J. LITTLE, F.R.C.P.,

Late Senior Physician of the London Hospital, &c.

Fernleigh, Oxton, Cheshire.

I am very thankful to be able to add my testimony to the curative effects of the Bath thermal waters, having derived the greatest benefit from them. I came here a fortnight ago unable to walk—a severe attack of acute sciatica having almost paralysed my right leg. After

twelve baths the pain is nearly gone, and I am able to walk a mile without fatigue. The whole arrangement of the baths is most excellent, and the attendance everything that can be desired.

WILLIAM OLLRICH, F.R.S.

9th October, 1883.

I have much pleasure in stating that during a fortnight's stay at Bath I have derived very great benefit from the waters. When I came the rheumatism in my left shoulder prevented me from raising my arm above my head, and now I can use my left arm almost as freely as the other. I cannot speak too highly of the excellence of the arrangements connected with the baths. Nothing can exceed the kind attention I have received.

HENRY FAWCETT, *Postmaster-General*.

New Royal Baths.

Lady Gordon Cumming is glad to report upon the extreme comforts and excellent arrangements of the baths. Very superior to any she has seen abroad. The attendants are most efficient and attentive.

New Royal Baths, Bath.

I have had 22 baths (with douche) from this establishment; my stiffened fingers, from rheumatic gout, have become much softer; the deposit of chalk in the joints has greatly diminished—a result which two of the most celebrated German baths could not accomplish. The young attendant of these baths has been most attentive and obliging.

JENNY LIND GOLDSCHMIDT.

5, Gay Street, Bath.

The Waters of Bath bear out their motto, "Water is best," most satisfactorily. I came here six months ago a prejudiced person against Bath and its waters, but leave enlightened as to their good effects, and hoping that Bath will before long regain its former renown. Having had a most severe attack of rheumatic fever two years ago, I underwent

a course of the Waters, both at Bagnère de Luchon and Aix-les-Bains (Savoy). Beneficial as they were, I may say that these Waters of Bath have proved far more advantageous. When after another attack two months ago, followed by sciatica, I came here unable to walk, and now, after visible improvement for some weeks, am leaving quite cured. I may add that the courtesy, civility and attention shown here by both attendants have been great and leaves nothing to be desired.

RANDEL FIELDING,

(North Lancashire Regt.)

Wilton Park, Blackburne.

New Royal Baths.

I suffer much from rheumatism and lumbago, brought on by getting wet through going out hunting, and have obtained much comfort and relief the last few seasons from attending these baths, and I wish I had the same at my own place.

FITZHARDINGE, Berkeley Castle.

New* Royal Baths.

I came here three weeks ago, just after a severe attack of rheumatic fever. My joints, both large and small, were stiff and very painful. I have used the hot mineral baths regularly, and am now almost perfectly restored. All pain has left me, and my joints are now supple. I consider that in this stage, after rheumatic fever, a course of these baths is the best means to be adopted. The attendant is courteous, obliging, and skilled in his duties. . . .

S. PARSON SMITH, *Physician & Surgeon*,

Parkhurst, Addiscombe, Croydon.

New Royal Baths.

Lady Portsmouth was advised to come here six weeks ago for almost chronic neuralgia, and I for rheumatic gout, which had for three years running attacked me at this time. We leave Bath very much benefited. In fact, thanks to the bath and waters, I have escaped

entirely an annual severe attack, and I feel better in health than I have been for years previously. We both cannot speak too highly of the management of the baths, and of the kindness and attention of the attendants.

C. PORTSMOUTH.
PORTSMOUTH.

New Royal Baths, The Grand Hotel.

I am convinced that the Bath Waters, judiciously used, are wonderfully efficacious in chronic attacks of a gouty or rheumatic character. The baths here are charming and more luxurious for the patients than any that I can remember in either Germany or France, and nothing can exceed the kindness and care of the bath attendants. Three months' severe gout in the eyes, in my case, yielded completely after thirteen baths.

F. LE GRIX WHITE,
Leaming Cumberland.

New Royal Baths.

Having been troubled with one of the forms of complaints arising from a gouty diathesis, in my case brought on by late party hours and hard work, I have found from a course of these baths all the benefits which I expected. . . .

LYON PLAYFAIR, F.R.S.

I have much pleasure in stating that I have taken eight baths and drunk the waters regularly, and find my knee greatly relieved from the rheumatic pains. The weather was too hot to allow of my remaining any longer, but I hope to return to Bath whenever again in pain. I cannot speak too highly of the management of the baths.

Easton Lodge, Dunmow

BLANCHE A. ROSSLYN.

It is a month since the Baroness de Penedo and I came here for a course of baths and waters, and I am very glad to say that we found them most beneficial, and feel greatly relieved from our ailments. The baths' arrangements are perfectly good, and management and attendance quite correct. No establishment of the kind abroad is superior to this, and it may be said it is matchless in Europe.

PENEDO,

Brazilian Minister at the Court of St. James's.

I arrived here suffering from Gout and Stiff Joints, the effects of an accident. After a five weeks' course of Baths, I find myself greatly benefited, more especially by the Aix-les-Bains treatment recently introduced, which had been strongly recommended to me by Mr. Hutton of 36, Queen Ann Street, London. I cannot speak too highly of the attention and civility of both the English and French attendants.

R. J. SPOFFORTH,

Major, Staff Officer of Pensioners.

I write this with much thankfulness in testimony of the efficacy of the Bath waters. I came here in February, suffering from rheumatic gout, and sceptical as to waters (or anything else) doing me good. I now leave convinced against my will that the Bath waters are more efficacious than any quantity of calcium—as I am perfectly cured, and feel ten years younger than I did the day I came here. The servants and attendants were most obliging and attentive.

L. MACDONALD, Cupar, Fifeshire.

I am very glad to be able to add my testimony as to the efficacy of the Bath waters in cases of acute sciatica, having been in bed for six months with a most severe attack of sciatica. As soon as I was able to travel (exactly one month ago) I came to Bath on crutches, and leave to-day, after 16 baths, able to walk without any assistance, and entirely free from pain.

A. RABY WATNEY, Twyford, Berks.

I came to Bath three weeks ago unable to walk more than a few yards after months of doctoring in town. I placed myself under the care of a medical man who advised me to drink the waters of Bath. I leave to-morrow quite restored, the pains all gone, and able to walk any reasonable distance.

J. EDWARD HUTTON.

Hampstead Heath, London.

I have derived much benefit from the Baths here, which are admirably conducted and attended to by the managers.

MALMESBURY.

Royal Baths, Grand Hotel.

I came here having been in bed for seven weeks suffering from Chronic Rheumatic Gout, and after a few baths I derived immense benefit, and in a few days I was able to walk about the room with the help of sticks. I persevered with the baths and drank the Waters. I am now able to walk without a stick, and my general health is greatly improved, and I would earnestly beg all who suffer from Rheumatism or Gout or such evils to give these Waters a fair trial, feeling sure they will obtain relief. I cannot help praising all the attendants for their care and attention. I may say I was carried into the Hotel on a stretcher, and to-day can walk out nearly restored and deeply grateful.

A. C. GRAYSTONE

New Royal Baths.

Having suffered for over two years with Chronic Rheumatism, Lumbago and Sciatica, I desire to record my testimony to the good I have experienced from a series of Baths and douches, added to the excellent packing, which I think a great additional benefit. The attendance has been all that could be desired, and now after four weeks' course I have been able to ride with the hounds and take a full day's exercise.

JAMES W. G. FARNELL.

I am thankful to say that the Baths and Waters of Bath, which I have taken for six weeks, having been suffering for three months from an attack of Gout, my general health is much improved, and the Gout is nearly gone. The arrangements of the baths are most excellent, and the care of the attendants all that can be desired.

W. C. RAYER.

Queen's Baths.

I have on two occasions derived much benefit from these Baths, and I gladly testify to the comfort of the arrangements.

E. LONG FOX.

I have derived the greatest benefit from a five weeks' course of these Baths and Waters. Having been here twice before and been completely cured, in my humble opinion there are no waters like them for Rheumatism and Rheumatic Gout. Buxton and Wiesbaden, both of which places I have tried, are not to be named in the same day with Bath. The Bath arrangements are perfect, and the attendants most civil and obliging.

EDWARD LETHBRIDGE.

Having dislocated my right shoulder some three months ago from an accident, I was recommended to undergo a course of the Bath Waters, Douches, &c., and before leaving I wish to bear testimony to their wonderful healing powers, to the comfort, cleanliness and general excellent management of all the rooms and arrangements, and to the skill, civility and attention of the attendant. To those suffering from Gout or Rheumatism, or the effects of an accident, I would strongly recommend these Waters in preference to those of Germany or France, thus saving a long journey, and avoiding foreign wines and food which generally are very inferior.

HENEAGE BAGOT CHESTER.

Grand Pump Room Hotel.

I have derived very great benefit from the use of the Bath Waters during a severe attack of sciatica, and especially from the use of the hot douche given through the water of a general bath. The good effect has been quite unequivocal, and I can freely say that the Bath Waters in my case have been curative. The arrangements of the Baths appear to be extremely good, and the attendants are very obliging and attentive. I refer especially to the new baths attached to the Hotel, as I have not been to the others.

E. A. PARKES, M.D., F.R.S.

I started in the year 1873 for a trip round the world. In my travels I visited the Baths of Constantinople, Homburg, St. Gervais, Vienna, Wiesbaden, New York and the Salt Baths, on board the P. & O. steamers, in the course of my trip to Australia, New Zealand and countless others, including Paris. I had incipient paralysis when I started, and I returned worse than I left. I live 14 miles from Bath, and after having tried Buxton in vain, I was induced to drive into Bath and try those waters occasionally. I still got worse, but at length I established myself in comfortable lodgings, and am now going home after having taken 19 or 20 consecutive baths, and drank the waters at the Pump Room. I can safely say that after that course I am infinitely better, and am going to dine with the Mayor of Chippenham on a festive occasion with good pluck and heart. My impression of the Baths of Bath is that in convenience they are quite unequalled.

HENRY ALWORTH MEREWETHER.

Pleasant Drives in the Neighbourhood of Bath.

ONE HOUR DRIVES.

(1) Along the Warminster Road, through the village of Claverton, up Claverton Lane, passing the Manor House on the right, down Bathwick Hill or the North Road.

(2) Down Pulteney Road, up Widcombe Hill, over Claverton Down to the Combe Down Road, down Prior Park Drive, through Widcombe into Bath.

(3) Through the Park, and the village of Weston, turning up a lane to the left to Partis College, home by the Upper Bristol Road.

(4) Through the Town and Park, along the Weston Road, as far as the village, turn up to the left, past Weston Manor House, and home by the Weston Road.

(5) Along the Warminster Road, through Bathampton, past the Manor House, over Batheaston Bridge, home through Grosvenor and Walcot.

DRIVES OF ABOUT TWO HOURS.

(1) Over the Old Bridge, up the Wells Road, across Combe Down to Midford village, by the side of the Canal, to Monkton Combe, up Brass Knocker Hill, along Claverton Down, home either by Bathwick, or Widcombe Hill.

(2) Up the Wells Road, passing Odd Down nearly as far as Dunkerton, turn off to the left to Combe Hay, up Fortnight Hill, back by Entry Hill.

(3) Along the Bristol Road to Newton S. Loe, up Rush Hill, down the Wells Road.

(4) Up Lansdown as far as the Blathwayt Arms, down Lansdown Lane, through the village of Weston, home by the Park.

(5) Through the Park to the Upper Bristol Road, to Partis College, and by the Lower Bristol Road to Corston, home by Twerton.

(6) Up Lansdown as far as the Racecourse, down a lane to the right, through the villages of Langridge and Swanswick, home by the Gloucester Road and Grosvenor.

THREE HOURS' DRIVES.

(1) Along the Bristol Road to Saltford and Keynsham, back by Kelston and the Park.

(2) Up Lansdown to Grenville's Monument to Wick, home by Swanswick, the Gloucester Road and Walcot.

(3) Along the London Road to Box Station, turn up to Middle Hill and Colerne, home down Bannerdown Hill and Batheaston.

(4) Up Lansdown, past Tracy Park, to Wick Rocks, home by Kelston and the Upper Bristol Road.

FOUR HOURS' DRIVES.

(1) Up Bathwick Hill, across Claverton Down, down Brass Knocker Hill, through Limpley Stoke, passing Hinton Abbey to Farleigh Castle, home by Hinton Charterhouse and Midford.

(2) Along the Warminster Road to Limpley Stoke, up Winsley Hill to Conkwell, back by Bathford and Batheaston.

(3) Through Batheaston, up Bannerdown Hill, to Marshfield, on to the Gloucester Road, home by the Cross Roads, Cold Ashton and Swanswick.

(4) Along the Gloucester Road nearly as far as Tolldown, turn to the left to Toghill, by the Grenville Monument, home by Lansdown.

(5) Along the London Road to Bathford, up Kingsdown Hill to South Wraxall Manor, home by Monkton Farleigh, and back of Warleigh, and through Bathford and Bathampton.

(6) Up Bathwick Hill, down Brass Knocker Hill or Claverton, to Winsley and Bradford, home by Bathford and Batheaston, Grosvenor and Walcot.

The Bathing Establishments of Bath.

TO THE BATHS COMMITTEE, BATH.

6, THE CIRCUS, BATH ;

June 22nd, 1885.

GENTLEMEN,

Having returned from my visit of inspection to Aix-les-Bains I now send you, according to promise, a report of my experiences and impressions, trusting that, in conjunction with the report which you will receive from Major Davis, this medical opinion may be of use to the Baths Committee in the proposed extension of their bathing establishments.

In the first place I would point out that, as a neutral thermal water, our own is in no way inferior, and, in the percentage of mineral ingredients, far exceeds that of our great Continental rival, but in the mode of application I feel sure that any impartial critic must confess our system crude and ineffectual in comparison to theirs. The fact that we have in so many cases procured such beneficial results by simple immersion is to my mind conclusive proof of the wonderful efficacy of the Bath Waters, and a hopeful augury of still more striking results in the future, when we have brought to bear the improved modes of application in use at Aix.

The essential difference between the two systems is that while we trust almost exclusively to simple immersion (for our two or three existing douches can hardly be taken into account), they have brought massage, douching and

shampooing to a greater state of perfection than has been attained at any other bathing establishment in the world.

Speaking only of immersion baths, there is no establishment in Europe which can show such a magnificent suite as that possessed by the Bath Corporation, and in this particular nothing could be suggested which would add to their comfort or efficiency. At Aix they have nothing corresponding to the deep baths here, with great volume of water and room for free movement. Their best immersion baths are hardly as large as our reclining baths, and, being Government property, have been fitted up in the plainest manner consistent with efficiency. The same feature of economy pervades the whole establishment. While nothing has been neglected which would secure success in treatment; not a penny has been spent on decoration or additional comfort. The bathing establishment at Aix consists of :—

- 1.—Two large swimming baths with cold douches.
- 2.—Two old swimming baths.
- 3.—Two commodious family swimming baths with cold douches.
- 4.—Forty-one single baths.
- 5.—Twenty-five large douches with two doucheurs or doucheuses.
- 6.—Twenty douches with single doucheur or doucheuse.
- 7.—Two douches “en cercle” (circular spray).
- 8.—Three douches à colonne.
- 9.—Six vapour baths.
- 10.—Two inhaling rooms.
- 11.—Three rooms for administering spray.

12.—Five vaporara.

13.—Six bouillons (steam baths).

14.—Four ascending douches.

15.—Four foot baths.

From the above it will be seen what great importance is placed upon douching, massage and shampooing. In speaking to a leading London physician on this subject before leaving England, his words, as nearly as I can recall them, were "Go straight to Aix-les-Bains. There you will see the best mode of applying thermal treatment in the world. Study it ; introduce it at Bath in the same luxurious style in which the immersion baths are conducted, and you need fear the rivalry of no thermal spa in Europe ; neglect it, and you must in the near future be left behind in the competition for bathing patients." At the same time he told me that he could only send one out of twenty rheumatic patients to Bath, because, in his opinion, the others required the massage treatment, for which we had no accommodation. This I believe to be the opinion of most of the leading men in the medical profession both in London and the provinces. The time has come when thermal treatment combined with massage and shampooing will take a prominent place in medical practice in all diseases in which it is applicable ; and I feel certain that, if we want to hold our own in the race, and increase our field of usefulness, the Corporation must extend their bathing establishment in a direction to meet the demand.

The douching rooms at Aix are about 10 to 12 feet square, lofty and well ventilated, and provided with douches of all kinds (rose, jet, needle, wave, spray, shower, &c., &c.),

the temperature and force of which are under the easy control of the attendants acting under medical orders.

In each are a simple wooden stool and bench, some have two attendants, others only one. The patient having undressed, enters the douching room and the doucheurs, one in front and one behind, play jets of water over the body, at the same time moving the joints to their utmost extent, kneading and shampooing the different parts and conducting a general system of massage. A tepid or cold shower for a finish, and the patient is well packed in warm sheets and blankets and sent home in a carrying chair and put to bed for a quarter to half-an-hour; still thoroughly packed. This sending of patients home after the bath is necessary as the establishment does not boast of any cooling rooms—a great disadvantage.

The bath occupies from five to twenty minutes, and, as one bather quickly follows another, they get through, on an average, four patients an hour to each bath room.

Besides these massage rooms there are several other very useful forms of baths, and I would specially draw attention to the following as being very desirable.

1.—The Douche en Cercle, or Circular Spray, Composed of tiers of pipes forming two-thirds of a circle, perforated with minute holes and emitting very fine jets of water, the temperature of the spray being under easy control of the bath attendant

2.—Steam bath, which is a simple box large enough for the patient to sit down comfortably in, and with a moveable lid, so constructed as to encircle the neck, leaving the head

outside. By means of a tap this can be filled with steam, and kept full as long as may be desired.

3.—Local vapour baths, by means of which any part of the body can be subjected to the vapour from the water. This is a specially useful form of treatment in joint affections, having a very relaxing effect on old stiffenings, and, when used in conjunction with shampooing and douching, yields better results than any other form of treatment.

This very perfect system of special thermal treatment has been the slow development of over twenty years of careful study and experiment, and is the one which universal experience pronounces to be most efficacious. Its success or failure is in no small degree dependent on the care and skill of the bath attendants, and in this Aix is unsurpassed. It is only by careful training and long practice that that peculiar delicacy and yet firmness of touch, which is a leading feature of the treatment, can be acquired. Every attendant at Aix has three years' apprenticeship and two years in a subordinate position before entering on full responsibilities. In starting this form of treatment the chief difficulty would be the procuring of thoroughly trained doucheurs ; but through the kindness of Dr. Brachet, Physician to the Bathing Establishment and Thermal Hospital at Aix, I have had the promise of very material help. He could procure for the Corporation the services of four of their most experienced attendants (two male and two female), from the end of September to the beginning of May, and would be willing to receive and train a like number at the Thermal Hospital during the bathing season, viz : from May to October. As

a point towards securing public confidence the power of advertising Aix doucheurs at Bath would be invaluable.

Before concluding this report I would beg to state my positive opinion that if the Baths Committee desire to increase their field of usefulness, and merit the continuance of public and medical support, it is absolutely necessary that they should extend the bathing establishment in the direction indicated, and which has proved such a success at Aix-les-Bains. The addition of ten or a dozen douching rooms would so relieve the pressure on the existing baths that in my opinion they would be sufficient to meet all demands, even should bathers increase at the same ratio as during recent years.

A point of secondary importance, but still deserving the consideration of the Committee, is the practice at Aix of admitting medical men, of every nationality free to all the advantages of the bathing establishments. The prosperity of every spa is so much in the hands of the medical profession that they consider they consult their own interests by this courteous treatment, and the fact speaks for itself that at the present moment there are no less than thirteen medical men undergoing the treatment at Aix.

Yours, &c.,

J. G. DOUGLAS KERR.

N.B.—This proposal was at once acceded to, and now medical men, on presenting their card to the Chairman of the Baths Committee, are made welcome to all the privileges of the bathing establishments free of charge.

INDEX.

	PAGE		PAGE
Abdominal Massage ...	78	Death Rate ...	11
Advertisement of Charges ...	40	Debility ...	22
Aix-les-Bains Baths ...	34	Deep Baths ...	29
Alcoholic Stimulants ...	45	Diet During Course ...	45
Anæmia ...	90	Diseases Benefited by Massage ...	87
Analysis of Water ...	62	Diseases Benefited by Waters ...	18
Attendants ...	73	Douche Ascendante ...	30
Average Number of Wet Days ...	10	Douches ...	27
Bathing Establishments ...	27	Douche Baths ...	30
Baths and Pump Rooms ...	27	Douche en Cercle ...	38
Bath Waters ...	60	Drinking the Waters ...	57
Baths Charge for ...	40	,, Dose ...	58
,, Caution to Bathers ...	47	,, Effects of ...	58
,, Diet During Course ...	45	Drives Round Bath ...	104
,, Duration of Course ...	54	Dryest Period of Year ...	10
,, Hints on Bathing ...	51	Dry Massage ...	74
,, Packing after ...	53	Duration of Baths ...	53
,, Preparation before ...	45	Duration of Course ...	54
,, Pressure of Water in ...	52	Dyspepsia ...	91
,, Taking Cold after ...	49	Ear ...	38
,, Temperature of ...	52	Early History ...	1
,, Time of day for ...	44	Effects of Drinking the Water ...	57
,, Time of year for ...	44	Effects of Massage ...	75
,, Treatment after ...	53	Effects of Baths ...	48, 55
Bladud ...	1	Effleurage ...	76
Boarding Houses ...	16	Electric Douches ...	36
Bodily and Mental Prostration ...	25	Electrical Contractility of Muscle ...	83
Carbonic Acid Gas ...	68	Emaciation ...	94
Catamenia ...	85	Enema and Lavement Apparatus ...	30
Caution to Bathers ...	47	Eczema ...	21
Cerebral and Spinal Exhaustion ...	90	Flat Foot ...	93
Chlorosis ...	22	Flatulence ...	91
Chorea ...	21	Fractures ...	94
Chronic Rheumatic Arthritis ...	19	Freestone Buildings ...	4
Chronic Joint Affections ...	94	Gases in the Waters ...	68
Circular Spray ...	38	General Debility ...	92
Climatic Advantages ...	9	Gout ...	18, 88
Climate ...	6	Grand Pump Room ...	27
Club Foot ...	94	Headache ...	91
Comparison between Bath & Buxton ...	67	Heart Disease ...	26
Comparison with other Spas ...	61, 67	Hetling Pump Room ...	43
Constipation ...	91	Hints on Bathing ...	51
Convalescence ...	92	Hot Baths ...	29
Convulsions ...	94	Hotels ...	14
Counter Indications to the Use of the Waters ...	24	House Sanitary Association ...	5
Cross Bath ...	31	Hysteria ...	89
Daily Range of Temperature ...	7	Increasing Popularity ...	12
		Insomnia ...	23, 90

	PAGE		PAGE
Joint Diseases	20	Pressure of Water	52
King's Bath	31	Price of Baths	40
Lateral Spinal Curvature	94	Proportion of Bathers Cured	14
Lepra	21	Psoriasis	21
Locomotor Ataxy	89	Railway Communication	17
Lodgings	16	Rainfall	10
Lumbago	21	Reclining Baths	30
Lymphatics	80	Report to Baths Committee	106
Malaria	24	Rheumatic Fever	19
Massage	71	Rheumatism	19
" Abdominal	78	Sanitary Arrangements	5
" Dangers Threatening	73	Scenery	3
" Definition of	72	Sciatica	21
" Dry Massage	74	Scrofula	25
" Duration of Séance	75	Season at Bath	44
" Early History of	71	Selection of Attendants	73
" Effects of	75	Selection of Spa	63
" Effleurage	76	Sensitive Spots	84
" Enfriction	77	Sheltered Position	4
" Overhand Rubbing	76	Situation	3
" Pétrissage	76	Skin Diseases	21
" Physiological Effects of	79	Spinal Affections Benefited by	
" Preservation of Hands	74	Massage	90
" Selection of Attendants	73	Spinal Curvature	94
" Tapotement	77	Spinal Exhaustion	89
Massengeil's Experiment	81	Spinal Irritation	89
Meal Time	26	Sprains	93
Menstruation	22	Sulis Water	31, 62
Mineral Water Hospital	32	Summary of Massage	85
Monthly Range of Temperature	7	Suppressed Gout	18
Morell Mackenzie Dr.	38	Surface Temperature	80
More Madden Dr.	23	Swimming Baths	30
Nervous Disorders	21, 88	Taking Cold after Baths	50
Neuralgia	21	Tapotement	77
New Baths	33	Telluric Heat	60
New Royal Baths	28	Temperature at Different Seasons	6
New Royal Swimming Bath	30	Temperature of Baths	52
Nitrogen Gas	69	Temperature of Water	60
Nose Douche	38	Tepid Baths	31
Overhand Rubbing	76	Thermal Vapour Baths	37
Packing after Baths	53	Throat Douche	38
Palsy	21	Time of Day for Baths	44
Paralysis	21	Time of Year for Bathing	44
Pétrissage	76	Uterine Disease	23, 90
Phthisis	25	Vapour Baths	30
Physiological Effects of Massage	75	Water Supply	5
Poisoning	93	Wet Neck	93
Preparation before Bathing	45	Zymotic Mortality	11
Preservation of Hands	14		





